

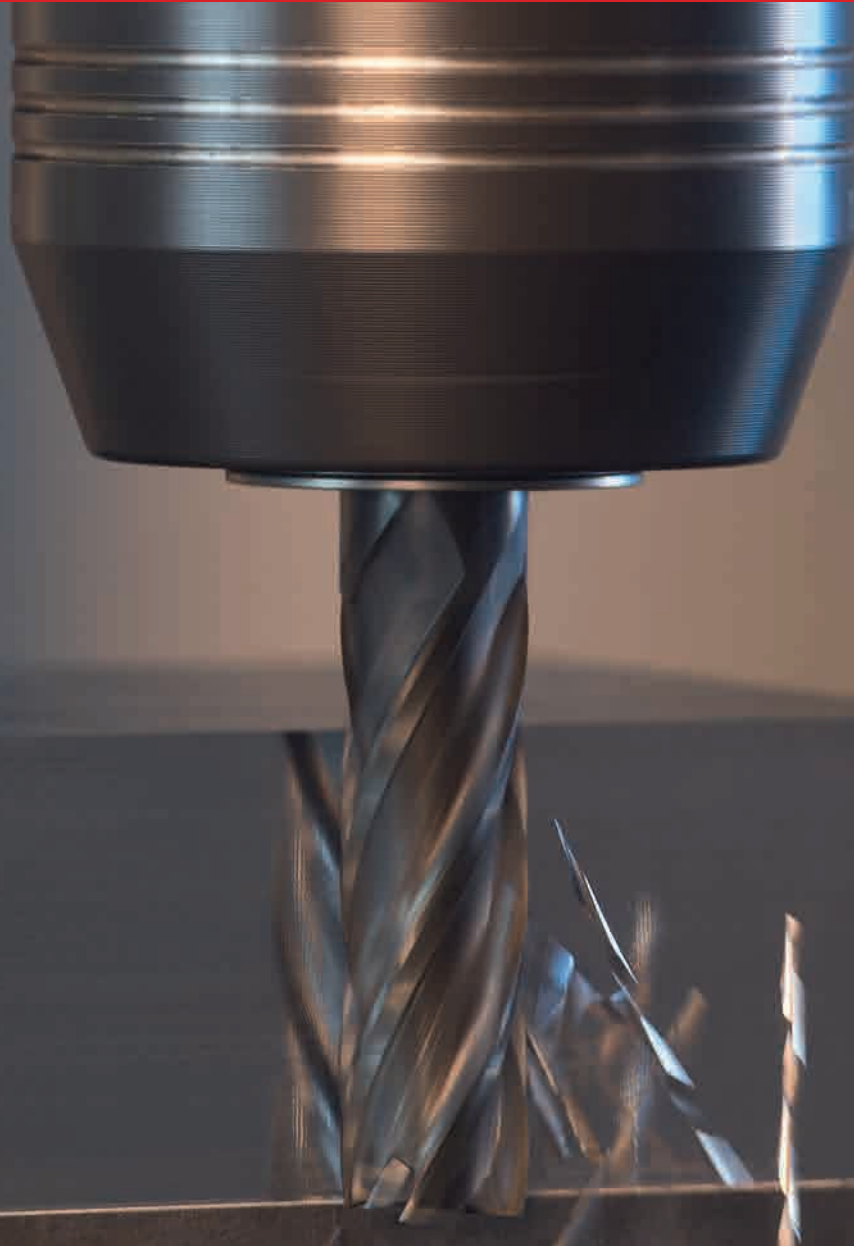
ARNO[®]

WERKZEUGE

We have a passion for precision.

VHM-/PM-HSS WERKZEUGE

Solid carbide-/PM-HSS Tools



**Hochleistungswerkzeuge
zum Fräsen und Bohren**

*High performance tools
for milling and drilling*

ARNO[®]

WERKZEUGE

We have a passion for precision.

VHM- UND PM-HSS-SPIRALBOHRER

Solid carbide and PM-HSS drills

Ausführung











- SP - 3 x D
- 3 x D für Aluminium
- 3 x D für rostfreie Stähle
- 3 x D PM-HSS Spiralbohrer
- 5 x D
- 5 x D für Aluminium
- 5 x D für rostfreie Stähle
- 5 x D für gehärtete Stähle
- 7 x D
- 7 x D PM-HSS Spiralbohrer
- 8 x D
- 8 x D für Aluminium
- 8 x D für rostfreie Stähle
- 10 x D
- 15 x D
- 20 x D
- 25 x D
- 30 x D
- NC-Anbohrer, 4 Schneiden, 90°, 120° und 135°
- Zentrierbohrer










Design

- SP - 3 x D
- 3 x D for aluminium
- 3 x D for stainless steel
- 3 x D powder metal drill
- 5 x D
- 5 x D for aluminium
- 5 x D for stainless steel
- 5 x D for hardened steel
- 7 x D
- 7 x D powder metal drill
- 8 x D
- 8 x D for aluminium
- 8 x D for stainless steel
- 10 x D
- 15 x D
- 20 x D
- 25 x D
- 30 x D
- NC spot drills, 4 flutes, 90°, 120° and 135°
- Centre drills



Ausführung Design	Bohrertyp Type	Innenkühlung Through tool coolant	Durchmesser Diameter [mm]	Abb. Picture	Seite Page
3xD					
3xD	Vollhartmetall-Spiralbohrer Solid carbide drill	X	1,0 - 10,0		408
3xD	Vollhartmetall-Spiralbohrer Solid carbide drill	X	1,0 - 20,0		410
3xD	Vollhartmetall-Spiralbohrer Solid carbide drill	✓	3,0 - 20,0		412
3xD	Vollhartmetall-Spiralbohrer Solid carbide drill für Aluminium / for aluminium diamant beschichtet / diamond coated	✓	3,0 - 20,0		414
3xD	Vollhartmetall-Spiralbohrer Solid carbide drill für rostfreie Stähle / for stainless steel	✓	3,0 - 20,0		416
3xD	PM-HSS-Spiralbohrer Powder metal drill	X	1,0 - 13,3		418
5xD					
5xD	Vollhartmetall-Spiralbohrer Solid carbide drill	X	1,0 - 20,0		420
5xD	Vollhartmetall-Spiralbohrer Solid carbide drill	✓	1,0 - 20,0		422
5xD	Vollhartmetall-Spiralbohrer Solid carbide drill für Aluminium / for aluminium diamant beschichtet / diamond coated	✓	3,0 - 20,0		424
5xD	Vollhartmetall-Spiralbohrer Solid carbide drill für rostfreie Stähle / for stainless steel	✓	1,5 - 20,0		426
5xD	Vollhartmetall-Spiralbohrer Solid carbide drill für gehärtete Stähle / for hardened steel	X	3,0 - 14,0		428

Ausführung Design	Bohrertyp Type	Innenkühlung Through tool coolant	Durchmesser Diameter [mm]	Abb. Picture	Seite Page
7xD					
7xD	Vollhartmetall-Spiralbohrer Solid carbide drill unbeschichtet/ uncoated	X	1,0 - 10,0		430
7xD	NEU NEW Vollhartmetall-Spiralbohrer Solid carbide drills	X	1,0 - 10,0		432
7xD	PM-HSS Spiralbohrer Powder metal drills	X	2,0 - 13,0		434
8xD					
8xD	Vollhartmetall-Spiralbohrer Solid carbide drill	✓	3,0 - 12,0		436
8xD	Vollhartmetall-Spiralbohrer Solid carbide drill für Aluminium / for aluminium diamant beschichtet / diamond coated	✓	3,0 - 14,0		438
8xD	Vollhartmetall-Spiralbohrer Solid carbide drill für rostfreie Stähle / for stainless steel	✓	3,0 - 14,0		440
10xD					
10xD	NEU NEW Vollhartmetall-Spiralbohrer Solid carbide drill	✓	3,0 - 14,0		442
15xD					
15xD	NEU NEW Vollhartmetall-Spiralbohrer Solid carbide drill	✓	3,0 - 12,0		443
20xD					
20xD	NEU NEW Vollhartmetall-Spiralbohrer Solid carbide drill	✓	3,0 - 12,0		444
25xD					
25xD	NEU NEW Vollhartmetall-Spiralbohrer Solid carbide drill	✓	12,0 - 50,0		445

Ausführung Design	Bohrertyp Type	Innenkühlung Through tool coolant	Durchmesser Diameter [mm]	Abb. Picture	Seite Page
30xD					
30xD NEU NEW	Vollhartmetall-Spiralbohrer Solid carbide drill	✓	8,0 - 32,0		446
Anbohrer und Zentrierer / Spot drills and centre drills					
Anbohrer/ Spot drills	Vollhartmetall NC-Anbohrer 90° Solid carbide NC spot drills 90°	✗	2,0 - 20,0		447
Anbohrer/ Spot drills	Vollhartmetall NC-Anbohrer 120° Solid carbide NC spot drills 120°	✗	2,0 - 20,0		448
Anbohrer/ Spot drills NEU NEW	Vollhartmetall NC-Anbohrer 135° Solid carbide NC spot drills 135°	✗	2,0 - 20,0		449
Anbohrer/ Spot drills	PM-HSS NC-Anbohrer 90° Powder metal NC spot drills 90°	✗	2,0 - 20,0		450
Anbohrer/ Spot drills	PM-HSS NC-Anbohrer 120° Powder metal NC spot drills 120°	✗	2,0 - 20,0		451
Anbohrer/ Spot drills NEU NEW	PM-HSS NC-Anbohrer 135° Powder metal NC spot drills 135°	✗	2,0 - 20,0		452
Zentrierer/ centre drills	Vollhartmetall Zentrierer Solid carbide centre drills	✗	1,0 - 6,3		453
Zentrierer/ centre drills	PM-HSS Zentrierer Powder metal centre drills °	✗	1,0 - 6,3		454

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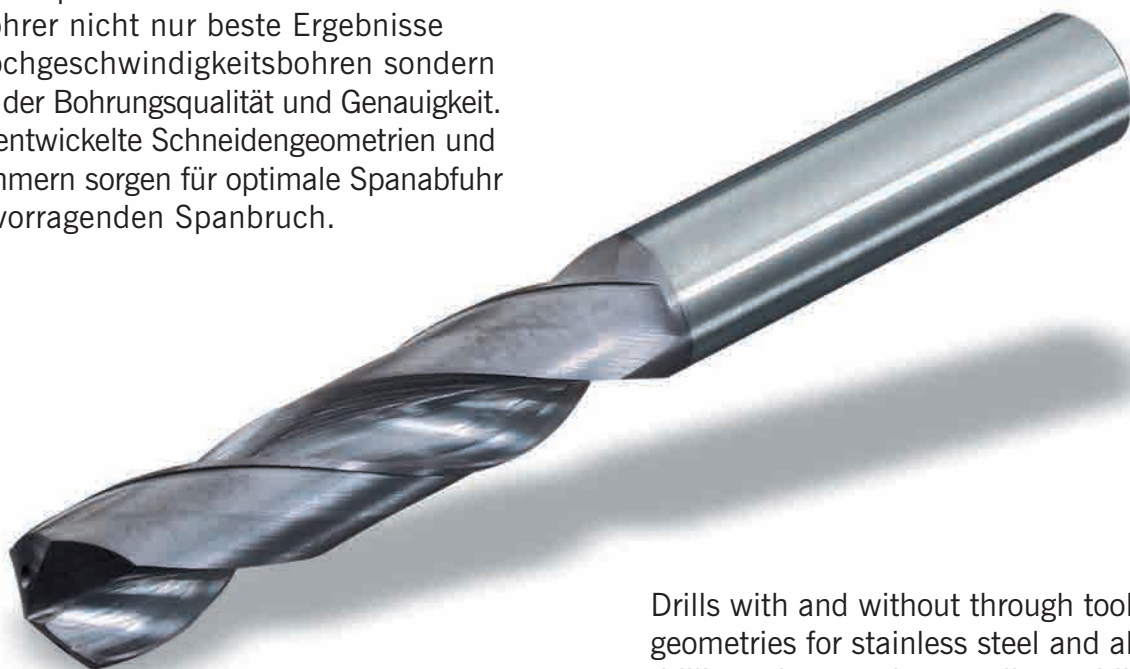
AUSFÜHRUNG SP

Design SP

Vollhartmetall und PM-HS Spiralbohrer. Höchste Präzision beim Bohren nahezu aller gängigen Werkstoffe.

Carbide and powder metal drills to cover all materials.

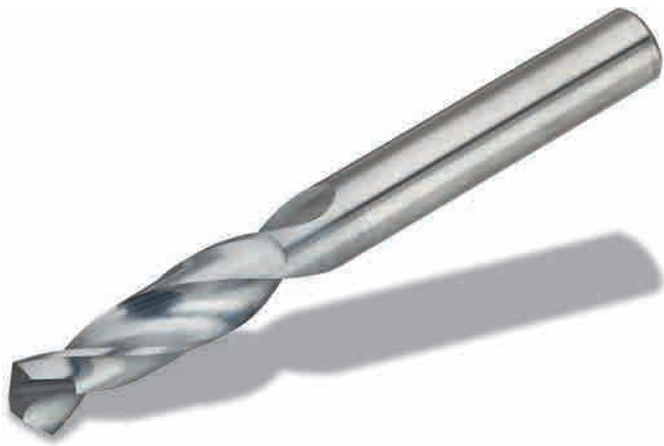
Durch ihre spezielle Konstruktion liefern die VHM-Bohrer nicht nur beste Ergebnisse beim Hochgeschwindigkeitsbohren sondern auch bei der Bohrungsqualität und Genauigkeit. Speziell entwickelte Schneidengeometrien und Spankammern sorgen für optimale Spanabfuhr und hervorragenden Spanbruch.



Drills with and without through tool coolant, geometries for stainless steel and aluminium drilling, also powder metallurgy drills for difficult applications.

Vollhartmetall-Spiralbohrer

Kurze Ausführung, ohne Innenkühlung



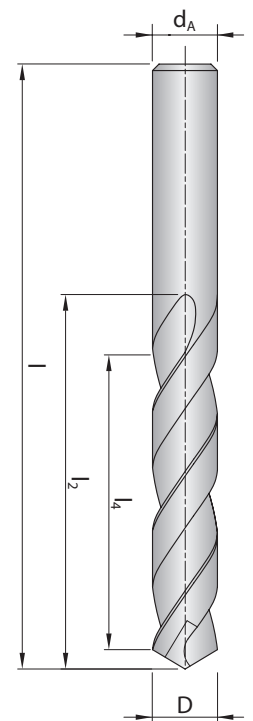
Solid carbide drills

Short design, without through tool coolant

h6	HA	1,0-10,0 mm	ohne IK without ic	Seite Page 455-462
118°	30°	h7	Unbeschichtet Uncoated	Feinstkorn Ultra micro granulation

Ausführung 3 x D / Execution 3 x D

Bezeichnung Designation	D h7	d _A h6	l	l ₂	l ₄
SP0100-0030 VHM/FK	1,00	1,00	26,0	6	3,00
SP0110-0033 VHM/FK	1,10	1,10	28,0	7	3,30
SP0120-0036 VHM/FK	1,20	1,20	30,0	8	3,60
SP0130-0039 VHM/FK	1,30	1,30	30,0	8	3,90
SP0140-0042 VHM/FK	1,40	1,40	32,0	9	4,20
SP0150-0045 VHM/FK	1,50	1,50	32,0	9	4,50
SP0160-0048 VHM/FK	1,60	1,60	34,0	10	4,80
SP0170-0051 VHM/FK	1,70	1,70	34,0	10	5,10
SP0180-0054 VHM/FK	1,80	1,80	36,0	11	5,40
SP0190-0057 VHM/FK	1,90	1,90	36,0	11	5,70
SP0200-0060 VHM/FK	2,00	2,00	38,0	12	6,00
SP0210-0063 VHM/FK	2,10	2,10	38,0	12	6,30
SP0220-0066 VHM/FK	2,20	2,20	40,0	13	6,60
SP0230-0069 VHM/FK	2,30	2,30	40,0	13	6,90
SP0240-0072 VHM/FK	2,40	2,40	43,0	14	7,20
SP0250-0075 VHM/FK	2,50	2,50	43,0	14	7,50
SP0260-0078 VHM/FK	2,60	2,60	43,0	14	7,80
SP0270-0081 VHM/FK	2,70	2,70	46,0	16	8,10
SP0280-0084 VHM/FK	2,80	2,80	46,0	16	8,40
SP0290-0087 VHM/FK	2,90	2,90	46,0	16	8,70
SP0300-0090 VHM/FK	3,00	3,00	46,0	16	9,00
SP0310-0093 VHM/FK	3,10	3,10	49,0	18	9,30
SP0320-0096 VHM/FK	3,20	3,20	49,0	18	9,60
SP0330-0099 VHM/FK	3,30	3,30	49,0	18	9,90
SP0340-0102 VHM/FK	3,40	3,40	52,0	20	10,20
SP0350-0105 VHM/FK	3,50	3,50	52,0	20	10,50
SP0360-0108 VHM/FK	3,60	3,60	52,0	20	10,80
SP0370-0111 VHM/FK	3,70	3,70	52,0	20	11,10
SP0380-0114 VHM/FK	3,80	3,80	52,0	20	11,40
SP0390-0117 VHM/FK	3,90	3,90	55,0	22	11,70
SP0400-0120 VHM/FK	4,00	4,00	55,0	22	12,00
SP0410-0123 VHM/FK	4,10	4,10	55,0	22	12,30
SP0420-0126 VHM/FK	4,20	4,20	55,0	22	12,60
SP0430-0129 VHM/FK	4,30	4,30	58,0	24	12,90
SP0440-0132 VHM/FK	4,40	4,40	58,0	24	13,20
SP0450-0135 VHM/FK	4,50	4,50	58,0	24	13,50
SP0460-0138 VHM/FK	4,60	4,60	58,0	24	13,80
SP0470-0141 VHM/FK	4,70	4,70	58,0	24	14,10
SP0480-0144 VHM/FK	4,80	4,80	62,0	26	14,40
SP0490-0147 VHM/FK	4,90	4,90	62,0	26	14,70
SP0500-0150 VHM/FK	5,00	5,00	62,0	26	15,00
SP0510-0153 VHM/FK	5,10	5,10	62,0	26	15,30



Vollhartmetall-Spiralbohrer

Kurze Ausführung, ohne Innenkühlung

Solid carbide drills

Short design, without through tool coolant

Ausführung 3 x D / Execution 3 x D

Bezeichnung Designation	D h7	d _A h6	l	l ₂	l ₄
SP0520-0156 VHM/FK	5,20	5,20	62,0	26	15,60
SP0530-0159 VHM/FK	5,30	5,30	62,0	26	15,90
SP0540-0162 VHM/FK	5,40	5,40	66,0	28	16,20
SP0550-0165 VHM/FK	5,50	5,50	66,0	28	16,50
SP0560-0168 VHM/FK	5,60	5,60	66,0	28	16,80
SP0570-0171 VHM/FK	5,70	5,70	66,0	28	17,10
SP0580-0174 VHM/FK	5,80	5,80	66,0	28	17,40
SP0590-0177 VHM/FK	5,90	5,90	66,0	28	17,70
SP0600-0180 VHM/FK	6,00	6,00	66,0	28	18,00
SP0610-0183 VHM/FK	6,10	6,10	70,0	31	18,30
SP0620-0186 VHM/FK	6,20	6,20	70,0	31	18,60
SP0630-0189 VHM/FK	6,30	6,30	70,0	31	18,90
SP0640-0192 VHM/FK	6,40	6,40	70,0	31	19,20
SP0650-0195 VHM/FK	6,50	6,50	70,0	31	19,50
SP0660-0198 VHM/FK	6,60	6,60	70,0	31	19,80
SP0670-0201 VHM/FK	6,70	6,70	70,0	31	20,10
SP0680-0204 VHM/FK	6,80	6,80	74,0	34	20,40
SP0690-0207 VHM/FK	6,90	6,90	74,0	34	20,70
SP0700-0210 VHM/FK	7,00	7,00	74,0	34	21,00
SP0710-0213 VHM/FK	7,10	7,10	74,0	34	21,30
SP0720-0216 VHM/FK	7,20	7,20	74,0	34	21,60
SP0730-0219 VHM/FK	7,30	7,30	74,0	34	21,90
SP0740-0222 VHM/FK	7,40	7,40	74,0	34	22,20
SP0750-0225 VHM/FK	7,50	7,50	74,0	34	22,50
SP0760-0228 VHM/FK	7,60	7,60	79,0	37	22,80
SP0770-0231 VHM/FK	7,70	7,70	79,0	37	23,10
SP0780-0234 VHM/FK	7,80	7,80	79,0	37	23,40
SP0790-0237 VHM/FK	7,90	7,90	79,0	37	23,70
SP0800-0240 VHM/FK	8,00	8,00	79,0	37	24,00
SP0810-0243 VHM/FK	8,10	8,10	79,0	37	24,30
SP0820-0246 VHM/FK	8,20	8,20	79,0	37	24,60
SP0830-0249 VHM/FK	8,30	8,30	79,0	37	24,90
SP0840-0252 VHM/FK	8,40	8,40	79,0	37	25,20
SP0850-0255 VHM/FK	8,50	8,50	79,0	37	25,50
SP0860-0258 VHM/FK	8,60	8,60	84,0	40	25,80
SP0870-0261 VHM/FK	8,70	8,70	84,0	40	26,10
SP0880-0264 VHM/FK	8,80	8,80	84,0	40	26,40
SP0890-0267 VHM/FK	8,90	8,90	84,0	40	26,70
SP0900-0270 VHM/FK	9,00	9,00	84,0	40	27,00
SP0910-0273 VHM/FK	9,10	9,10	84,0	40	27,30
SP0920-0276 VHM/FK	9,20	9,20	84,0	40	27,60
SP0930-0279 VHM/FK	9,30	9,30	84,0	40	27,90
SP0940-0282 VHM/FK	9,40	9,40	84,0	40	28,20
SP0950-0285 VHM/FK	9,50	9,50	84,0	40	28,50
SP0960-0288 VHM/FK	9,60	9,60	89,0	43	28,80
SP0970-0291 VHM/FK	9,70	9,70	89,0	43	29,10
SP0980-0294 VHM/FK	9,80	9,80	89,0	43	29,40
SP0990-0297 VHM/FK	9,90	9,90	89,0	43	29,70
SP1000-0300 VHM/FK	10,00	10,00	89,0	43	30,00

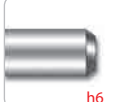
Vollhartmetall-Spiralbohrer

Kurze Ausführung, ohne Innenkühlung




Solid carbide drills


Short design, without through tool coolant




h6




HA




1,0-20,0 mm




ohne IK
without ic




Seite
Page
455-462




140°




30°



m7



TiAlN

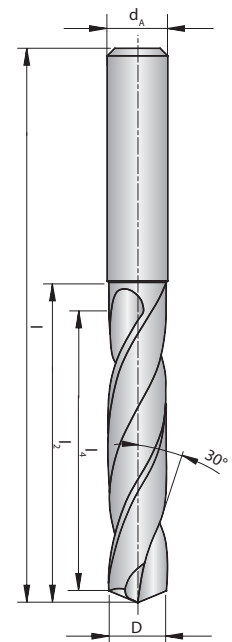


Feinstkorn
Ultra micro
granulation

3
xD

Ausführung 3 x D / Execution 3 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0100-0030 VHM/TIALN	1,00	3,00	45,0	7	3,00
SP0110-0033 VHM/TIALN	1,10	3,00	45,0	7	3,30
SP0120-0036 VHM/TIALN	1,20	3,00	45,0	7	3,60
SP0130-0039 VHM/TIALN	1,30	3,00	45,0	7	3,90
SP0140-0042 VHM/TIALN	1,40	3,00	45,0	7	4,20
SP0150-0045 VHM/TIALN	1,50	3,00	55,0	14	4,50
SP0160-0048 VHM/TIALN	1,60	3,00	55,0	14	4,80
SP0170-0051 VHM/TIALN	1,70	3,00	55,0	14	5,10
SP0180-0054 VHM/TIALN	1,80	3,00	55,0	14	5,40
SP0190-0057 VHM/TIALN	1,90	4,00	55,0	14	5,70
SP0200-0060 VHM/TIALN	2,00	4,00	55,0	20	6,00
SP0210-0063 VHM/TIALN	2,10	4,00	55,0	20	6,30
SP0220-0066 VHM/TIALN	2,20	4,00	55,0	20	6,60
SP0230-0069 VHM/TIALN	2,30	4,00	55,0	20	6,90
SP0240-0072 VHM/TIALN	2,40	4,00	55,0	20	7,20
SP0250-0075 VHM/TIALN	2,50	4,00	55,0	20	7,50
SP0260-0078 VHM/TIALN	2,60	4,00	55,0	20	7,80
SP0270-0081 VHM/TIALN	2,70	4,00	55,0	20	8,10
SP0280-0084 VHM/TIALN	2,80	4,00	55,0	20	8,40
SP0290-0087 VHM/TIALN	2,90	4,00	55,0	20	8,70
SP0300-0090 VHM/TIALN	3,00	6,00	62,0	20	9,00
SP0310-0093 VHM/TIALN	3,10	6,00	62,0	20	9,30
SP0320-0096 VHM/TIALN	3,20	6,00	62,0	20	9,60
SP0330-0099 VHM/TIALN	3,30	6,00	62,0	20	9,90
SP0340-0102 VHM/TIALN	3,40	6,00	62,0	20	10,20
SP0350-0105 VHM/TIALN	3,50	6,00	62,0	20	10,50
SP0360-0108 VHM/TIALN	3,60	6,00	62,0	20	10,80
SP0370-0111 VHM/TIALN	3,70	6,00	62,0	20	11,10
SP0380-0114 VHM/TIALN	3,80	6,00	66,0	24	11,40
SP0390-0117 VHM/TIALN	3,90	6,00	66,0	24	11,70
SP0400-0120 VHM/TIALN	4,00	6,00	66,0	24	12,00
SP0408-0122 VHM/TIALN	4,08	6,00	66,0	24	12,20
SP0410-0123 VHM/TIALN	4,10	6,00	66,0	24	12,30
SP0420-0126 VHM/TIALN	4,20	6,00	66,0	24	12,60
SP0425-0128 VHM/TIALN N	4,25	6,00	66,0	24	12,80
SP0430-0129 VHM/TIALN	4,30	6,00	66,0	24	12,90
SP0440-0132 VHM/TIALN	4,40	6,00	66,0	24	13,20
SP0450-0135 VHM/TIALN	4,50	6,00	66,0	24	13,50
SP0460-0138 VHM/TIALN	4,60	6,00	66,0	24	13,80
SP0470-0141 VHM/TIALN	4,70	6,00	66,0	24	14,10
SP0480-0144 VHM/TIALN	4,80	6,00	66,0	28	14,40
SP0490-0147 VHM/TIALN	4,90	6,00	66,0	28	14,70



Vollhartmetall-Spiralbohrer

Kurze Ausführung, ohne Innenkühlung

Ausführung 3 x D / Execution 3 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0497-0150 VHM/TIALN N	4,97	6,00	66,0	28	15,00
SP0500-0150 VHM/TIALN	5,00	6,00	66,0	28	15,00
SP0509-0153 VHM/TIALN	5,09	6,00	66,0	28	15,30
SP0510-0153 VHM/TIALN	5,10	6,00	66,0	28	15,30
SP0520-0156 VHM/TIALN	5,20	6,00	66,0	28	15,60
SP0530-0159 VHM/TIALN	5,30	6,00	66,0	28	15,90
SP0540-0162 VHM/TIALN	5,40	6,00	66,0	28	16,20
SP0550-0165 VHM/TIALN	5,50	6,00	66,0	28	16,50
SP0560-0168 VHM/TIALN	5,60	6,00	66,0	28	16,80
SP0570-0171 VHM/TIALN	5,70	6,00	66,0	28	17,10
SP0580-0174 VHM/TIALN	5,80	6,00	66,0	28	17,40
SP0590-0177 VHM/TIALN	5,90	6,00	66,0	28	17,70
SP0600-0180 VHM/TIALN	6,00	6,00	66,0	28	18,00
SP0609-0183 VHM/TIALN	6,09	8,00	79,0	34	18,30
SP0610-0183 VHM/TIALN	6,10	8,00	79,0	34	18,30
SP0620-0186 VHM/TIALN	6,20	8,00	79,0	34	18,60
SP0630-0189 VHM/TIALN	6,30	8,00	79,0	34	18,90
SP0640-0192 VHM/TIALN	6,40	8,00	79,0	34	19,20
SP0650-0195 VHM/TIALN	6,50	8,00	79,0	34	19,50
SP0655-0197 VHM/TIALN N	6,55	8,00	79,0	34	19,70
SP0660-0198 VHM/TIALN	6,60	8,00	79,0	34	19,80
SP0670-0201 VHM/TIALN	6,70	8,00	79,0	34	20,10
SP0680-0204 VHM/TIALN	6,80	8,00	79,0	34	20,40
SP0690-0207 VHM/TIALN	6,90	8,00	79,0	34	20,70
SP0700-0210 VHM/TIALN	7,00	8,00	79,0	34	21,00
SP0710-0213 VHM/TIALN	7,10	8,00	79,0	41	21,30
SP0720-0216 VHM/TIALN	7,20	8,00	79,0	41	21,60
SP0730-0219 VHM/TIALN	7,30	8,00	79,0	41	21,90
SP0740-0222 VHM/TIALN	7,40	8,00	79,0	41	22,20
SP0750-0225 VHM/TIALN	7,50	8,00	79,0	41	22,50
SP0760-0228 VHM/TIALN	7,60	8,00	79,0	41	22,80
SP0770-0231 VHM/TIALN	7,70	8,00	79,0	41	23,10
SP0780-0234 VHM/TIALN	7,80	8,00	79,0	41	23,40
SP0790-0237 VHM/TIALN	7,90	8,00	79,0	41	23,70
SP0800-0240 VHM/TIALN	8,00	8,00	79,0	41	24,00
SP0810-0243 VHM/TIALN	8,10	10,00	89,0	47	24,30
SP0820-0246 VHM/TIALN	8,20	10,00	89,0	47	24,60
SP0830-0249 VHM/TIALN	8,30	10,00	89,0	47	24,90
SP0840-0252 VHM/TIALN	8,40	10,00	89,0	47	25,20
SP0850-0255 VHM/TIALN	8,50	10,00	89,0	47	25,50
SP0860-0258 VHM/TIALN	8,60	10,00	89,0	47	25,80
SP0870-0261 VHM/TIALN	8,70	10,00	89,0	47	26,10
SP0880-0264 VHM/TIALN	8,80	10,00	89,0	47	26,40
SP0890-0267 VHM/TIALN	8,90	10,00	89,0	47	26,70
SP0900-0270 VHM/TIALN	9,00	10,00	89,0	47	27,00
SP0910-0273 VHM/TIALN	9,10	10,00	89,0	47	27,30
SP0920-0276 VHM/TIALN	9,20	10,00	89,0	47	27,60
SP0930-0279 VHM/TIALN	9,30	10,00	89,0	47	27,90
SP0940-0282 VHM/TIALN	9,40	10,00	89,0	47	28,20
SP0950-0285 VHM/TIALN	9,50	10,00	89,0	47	28,50
SP0960-0288 VHM/TIALN	9,60	10,00	89,0	47	28,80
SP0970-0291 VHM/TIALN	9,70	10,00	89,0	47	29,10
SP0980-0294 VHM/TIALN	9,80	10,00	89,0	47	29,40
SP0990-0297 VHM/TIALN	9,90	10,00	89,0	47	29,70
SP1000-0300 VHM/TIALN	10,00	10,00	89,0	47	30,00
SP1010-0303 VHM/TIALN	10,10	12,00	102,0	55	30,30
SP1020-0306 VHM/TIALN	10,20	12,00	102,0	55	30,60
SP1030-0309 VHM/TIALN	10,30	12,00	102,0	55	30,90

Solid carbide drills

Short design, without through tool coolant

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP1040-0312 VHM/TIALN	10,40	12,00	102,0	55	31,20
SP1050-0315 VHM/TIALN	10,50	12,00	102,0	55	31,50
SP1060-0318 VHM/TIALN	10,60	12,00	102,0	55	31,80
SP1070-0321 VHM/TIALN	10,70	12,00	102,0	55	32,10
SP1080-0324 VHM/TIALN	10,80	12,00	102,0	55	32,40
SP1090-0327 VHM/TIALN	10,90	12,00	102,0	55	32,70
SP1100-0330 VHM/TIALN	11,00	12,00	102,0	55	33,00
SP1110-0333 VHM/TIALN	11,10	12,00	102,0	55	33,30
SP1120-0336 VHM/TIALN	11,20	12,00	102,0	55	33,60
SP1130-0339 VHM/TIALN	11,30	12,00	102,0	55	33,90
SP1140-0342 VHM/TIALN	11,40	12,00	102,0	55	34,20
SP1150-0345 VHM/TIALN	11,50	12,00	102,0	55	34,50
SP1160-0348 VHM/TIALN	11,60	12,00	102,0	55	34,80
SP1170-0351 VHM/TIALN	11,70	12,00	102,0	55	35,10
SP1180-0354 VHM/TIALN	11,80	12,00	102,0	55	35,40
SP1190-0357 VHM/TIALN	11,90	12,00	102,0	55	35,70
SP1200-0360 VHM/TIALN	12,00	12,00	102,0	55	36,00
SP1230-0369 VHM/TIALN	12,30	14,00	107,0	60	36,90
SP1250-0375 VHM/TIALN	12,50	14,00	107,0	60	37,50
SP1280-0384 VHM/TIALN	12,80	14,00	107,0	60	38,40
SP1300-0390 VHM/TIALN	13,00	14,00	107,0	60	39,00
SP1350-0405 VHM/TIALN	13,50	14,00	107,0	60	40,50
SP1380-0414 VHM/TIALN	13,80	14,00	107,0	60	41,40
SP1400-0420 VHM/TIALN	14,00	14,00	107,0	60	42,00
SP1450-0435 VHM/TIALN	14,50	16,00	115,0	65	43,50
SP1480-0444 VHM/TIALN	14,80	16,00	115,0	65	44,40
SP1500-0450 VHM/TIALN	15,00	16,00	115,0	65	45,00
SP1550-0465 VHM/TIALN	15,50	16,00	115,0	65	46,50
SP1580-0474 VHM/TIALN	15,80	16,00	115,0	65	47,40
SP1600-0480 VHM/TIALN	16,00	16,00	115,0	65	48,00
SP1650-0495 VHM/TIALN	16,50	18,00	123,0	73	49,50
SP1680-0504 VHM/TIALN	16,80	18,00	123,0	73	50,40
SP1700-0510 VHM/TIALN	17,00	18,00	123,0	73	51,00
SP1750-0525 VHM/TIALN	17,50	18,00	123,0	73	52,50
SP1780-0534 VHM/TIALN	17,80	18,00	123,0	73	53,40
SP1800-0540 VHM/TIALN	18,00	18,00	123,0	73	54,00
SP1850-0555 VHM/TIALN	18,50	20,00	131,0	79	55,50
SP1880-0564 VHM/TIALN	18,80	20,00	131,0	79	56,40
SP1900-0570 VHM/TIALN	19,00	20,00	131,0	79	57,00
SP1950-0585 VHM/TIALN	19,50	20,00	131,0	79	58,50
SP1980-0594 VHM/TIALN	19,80	20,00	131,0	79	59,40
SP2000-0600 VHM/TIALN	20,00	20,00	131,0	79	60,00


Vollhartmetall-Spiralbohrer

Kurze Ausführung, mit Innenkühlung




Solid carbide drills


Short design, with through tool coolant




h6




HAK




1,0-20,0 mm



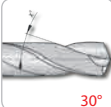
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m7



TiAlN

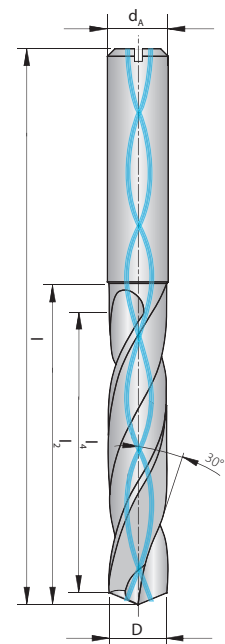


Feinstkorn
Ultra micro
granulation

3
xD

Ausführung 3 x D / Execution 3 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0100-0030 VHM/TIALN	1,00	3,00	45,0	7	3,00
SPC0110-0033 VHM/TIALN	1,10	3,00	45,0	7	3,30
SPC0120-0036 VHM/TIALN	1,20	3,00	45,0	7	3,60
SPC0130-0039 VHM/TIALN	1,30	3,00	45,0	7	3,90
SPC0140-0042 VHM/TIALN	1,40	3,00	45,0	7	4,20
SPC0150-0045 VHM/TIALN	1,50	3,00	55,0	14	4,50
SPC0160-0048 VHM/TIALN	1,60	3,00	55,0	14	4,80
SPC0170-0051 VHM/TIALN	1,70	3,00	55,0	14	5,10
SPC0180-0054 VHM/TIALN	1,80	3,00	55,0	14	5,40
SPC0190-0057 VHM/TIALN	1,90	3,00	55,0	14	5,70
SPC0200-0060 VHM/TIALN	2,00	4,00	55,0	20	6,00
SPC0210-0063 VHM/TIALN	2,10	4,00	55,0	20	6,30
SPC0220-0066 VHM/TIALN	2,20	4,00	55,0	20	6,60
SPC0230-0069 VHM/TIALN	2,30	4,00	55,0	20	6,90
SPC0240-0072 VHM/TIALN	2,40	4,00	55,0	20	7,20
SPC0250-0075 VHM/TIALN	2,50	4,00	55,0	20	7,50
SPC0258-00774 VHM/TIALN N	2,58	4,00	55,0	20	7,74
SPC0260-0078 VHM/TIALN	2,60	4,00	55,0	20	7,80
SPC0270-0081 VHM/TIALN	2,70	4,00	55,0	20	8,10
SPC0280-0084 VHM/TIALN	2,80	4,00	55,0	20	8,40
SPC0290-0087 VHM/TIALN	2,90	4,00	55,0	20	8,70
SPC0300-0090 VHM/TIALN	3,00	6,00	62,0	20	9,00
SPC0310-0093 VHM/TIALN	3,10	6,00	62,0	20	9,30
SPC0320-0096 VHM/TIALN	3,20	6,00	62,0	20	9,60
SPC0325-0098 VHM/TIALN	3,25	6,00	62,0	20	9,80
SPC0330-0099 VHM/TIALN	3,30	6,00	62,0	20	9,90
SPC0340-0102 VHM/TIALN	3,40	6,00	62,0	20	10,20
SPC0350-0105 VHM/TIALN	3,50	6,00	62,0	20	10,50
SPC0360-0108 VHM/TIALN	3,60	6,00	62,0	20	10,80
SPC0370-0111 VHM/TIALN	3,70	6,00	62,0	20	11,10
SPC0380-0114 VHM/TIALN	3,80	6,00	66,0	24	11,40
SPC0390-0117 VHM/TIALN	3,90	6,00	66,0	24	11,70
SPC0400-0120 VHM/TIALN	4,00	6,00	66,0	24	12,00
SPC0410-0123 VHM/TIALN	4,10	6,00	66,0	24	12,30
SPC0415-0125 VHM/TIALN	4,15	6,00	66,0	24	12,50
SPC0420-0126 VHM/TIALN	4,20	6,00	66,0	24	12,60
SPC0430-0129 VHM/TIALN	4,30	6,00	66,0	24	12,90
SPC0440-0132 VHM/TIALN	4,40	6,00	66,0	24	13,20
SPC0450-0135 VHM/TIALN	4,50	6,00	66,0	24	13,50
SPC0460-0138 VHM/TIALN	4,60	6,00	66,0	24	13,80
SPC0465-0140 VHM/TIALN	4,65	6,00	66,0	24	14,00
SPC0470-0141 VHM/TIALN	4,70	6,00	66,0	24	14,10



Vollhartmetall-Spiralbohrer

Kurze Ausführung, mit Innenkühlung

Ausführung 3 x D / Execution 3 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0480-0144 VHM/TIALN	4,80	6,00	66,0	28	14,40
SPC0490-0147 VHM/TIALN	4,90	6,00	66,0	28	14,70
SPC0500-0150 VHM/TIALN	5,00	6,00	66,0	28	15,00
SPC0510-0153 VHM/TIALN	5,10	6,00	66,0	28	15,30
SPC0520-0156 VHM/TIALN	5,20	6,00	66,0	28	15,60
SPC0530-0159 VHM/TIALN	5,30	6,00	66,0	28	15,90
SPC0540-0162 VHM/TIALN	5,40	6,00	66,0	28	16,20
SPC0550-0165 VHM/TIALN	5,50	6,00	66,0	28	16,50
SPC0555-0167 VHM/TIALN	5,55	6,00	66,0	28	16,70
SPC0560-0168 VHM/TIALN	5,60	6,00	66,0	28	16,80
SPC0570-0171 VHM/TIALN	5,70	6,00	66,0	28	17,10
SPC0580-0174 VHM/TIALN	5,80	6,00	66,0	28	17,40
SPC0590-0177 VHM/TIALN	5,90	6,00	66,0	28	17,70
SPC0600-0180 VHM/TIALN	6,00	6,00	66,0	28	18,00
SPC0610-0183 VHM/TIALN	6,10	8,00	79,0	34	18,30
SPC0620-0186 VHM/TIALN	6,20	8,00	79,0	34	18,60
SPC0630-0189 VHM/TIALN	6,30	8,00	79,0	34	18,90
SPC0640-0192 VHM/TIALN	6,40	8,00	79,0	34	19,20
SPC0650-0195 VHM/TIALN	6,50	8,00	79,0	34	19,50
SPC0655-0197 VHM/TIALN	6,55	8,00	79,0	34	19,70
SPC0660-0198 VHM/TIALN	6,60	8,00	79,0	34	19,80
SPC0670-0201 VHM/TIALN	6,70	8,00	79,0	34	20,10
SPC0680-0204 VHM/TIALN	6,80	8,00	79,0	34	20,40
SPC0690-0207 VHM/TIALN	6,90	8,00	79,0	34	20,70
SPC0700-0210 VHM/TIALN	7,00	8,00	79,0	34	21,00
SPC0710-0213 VHM/TIALN	7,10	8,00	79,0	41	21,30
SPC0720-0216 VHM/TIALN	7,20	8,00	79,0	41	21,60
SPC0730-0219 VHM/TIALN	7,30	8,00	79,0	41	21,90
SPC0740-0222 VHM/TIALN	7,40	8,00	79,0	41	22,20
SPC0745-0224 VHM/TIALN	7,45	8,00	79,0	41	22,40
SPC0750-0225 VHM/TIALN	7,50	8,00	79,0	41	22,50
SPC0760-0228 VHM/TIALN	7,60	8,00	79,0	41	22,80
SPC0770-0231 VHM/TIALN	7,70	8,00	79,0	41	23,10
SPC0780-0234 VHM/TIALN	7,80	8,00	79,0	41	23,40
SPC0790-0237 VHM/TIALN	7,90	8,00	79,0	41	23,70
SPC0800-0240 VHM/TIALN	8,00	8,00	79,0	41	24,00
SPC0810-0243 VHM/TIALN	8,10	10,00	89,0	47	24,30
SPC0820-0246 VHM/TIALN	8,20	10,00	89,0	47	24,60
SPC0830-0249 VHM/TIALN	8,30	10,00	89,0	47	24,90
SPC0840-0252 VHM/TIALN	8,40	10,00	89,0	47	25,20
SPC0850-0255 VHM/TIALN	8,50	10,00	89,0	47	25,50
SPC0860-0258 VHM/TIALN	8,60	10,00	89,0	47	25,80
SPC0870-0261 VHM/TIALN	8,70	10,00	89,0	47	26,10
SPC0880-0264 VHM/TIALN	8,80	10,00	89,0	47	26,40
SPC0890-0267 VHM/TIALN	8,90	10,00	89,0	47	26,70
SPC0900-0270 VHM/TIALN	9,00	10,00	89,0	47	27,00
SPC0910-0273 VHM/TIALN	9,10	10,00	89,0	47	27,30
SPC0920-0276 VHM/TIALN	9,20	10,00	89,0	47	27,60
SPC0925-0278 VHM/TIALN	9,25	10,00	89,0	47	27,80
SPC0930-0279 VHM/TIALN	9,30	10,00	89,0	47	27,90
SPC0940-0282 VHM/TIALN	9,40	10,00	89,0	47	28,20
SPC0950-0285 VHM/TIALN	9,50	10,00	89,0	47	28,50
SPC0960-0288 VHM/TIALN	9,60	10,00	89,0	47	28,80
SPC0970-0291 VHM/TIALN	9,70	10,00	89,0	47	29,10
SPC0980-0294 VHM/TIALN	9,80	10,00	89,0	47	29,40
SPC0990-0297 VHM/TIALN	9,90	10,00	89,0	47	29,70
SPC1000-0300 VHM/TIALN	10,00	10,00	89,0	47	30,00
SPC1010-0303 VHM/TIALN	10,10	12,00	102,0	55	30,30

Solid carbide drills

Short design, with through tool coolant

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC1020-0306 VHM/TIALN	10,20	12,00	102,0	55	30,60
SPC1025-0308 VHM/TIALN	10,25	12,00	102,0	55	30,80
SPC1030-0309 VHM/TIALN	10,30	12,00	102,0	55	30,90
SPC1040-0312 VHM/TIALN	10,40	12,00	102,0	55	31,20
SPC1050-0315 VHM/TIALN	10,50	12,00	102,0	55	31,50
SPC1060-0318 VHM/TIALN	10,60	12,00	102,0	55	31,80
SPC1070-0321 VHM/TIALN	10,70	12,00	102,0	55	32,10
SPC1080-0324 VHM/TIALN	10,80	12,00	102,0	55	32,40
SPC1090-0327 VHM/TIALN	10,90	12,00	102,0	55	32,70
SPC1100-0330 VHM/TIALN	11,00	12,00	102,0	55	33,00
SPC1110-0333 VHM/TIALN	11,10	12,00	102,0	55	33,30
SPC1120-0336 VHM/TIALN	11,20	12,00	102,0	55	33,60
SPC1130-0339 VHM/TIALN	11,30	12,00	102,0	55	33,90
SPC1140-0342 VHM/TIALN	11,40	12,00	102,0	55	34,20
SPC1150-0345 VHM/TIALN	11,50	12,00	102,0	55	34,50
SPC1160-0348 VHM/TIALN	11,60	12,00	102,0	55	34,80
SPC1170-0351 VHM/TIALN	11,70	12,00	102,0	55	35,10
SPC1180-0354 VHM/TIALN	11,80	12,00	102,0	55	35,40
SPC1190-0357 VHM/TIALN	11,90	12,00	102,0	55	35,70
SPC1200-0360 VHM/TIALN	12,00	12,00	102,0	55	36,00
SPC1250-0375 VHM/TIALN	12,50	14,00	107,0	60	37,50
SPC1280-0384 VHM/TIALN	12,80	14,00	107,0	60	38,40
SPC1300-0390 VHM/TIALN	13,00	14,00	107,0	60	39,00
SPC1310-0393 VHM/TIALN	13,10	14,00	107,0	60	39,30
SPC1350-0405 VHM/TIALN	13,50	14,00	107,0	60	40,50
SPC1380-0414 VHM/TIALN	13,80	14,00	107,0	60	41,40
SPC1400-0420 VHM/TIALN	14,00	14,00	107,0	60	42,00
SPC1420-0426 VHM/TIALN	14,20	16,00	115,0	65	42,60
SPC1450-0435 VHM/TIALN	14,50	16,00	115,0	65	43,50
SPC1500-0450 VHM/TIALN	15,00	16,00	115,0	65	45,00
SPC1510-0453 VHM/TIALN	15,10	16,00	115,0	65	45,30
SPC1550-0465 VHM/TIALN	15,50	16,00	115,0	65	46,50
SPC1580-0474 VHM/TIALN	15,80	16,00	115,0	65	47,40
SPC1600-0480 VHM/TIALN	16,00	16,00	115,0	65	48,00
SPC1650-0495 VHM/TIALN	16,50	18,00	123,0	73	49,50
SPC1680-0504 VHM/TIALN	16,80	18,00	123,0	73	50,40
SPC1690-0507 VHM/TIALN	16,90	18,00	123,0	73	50,70
SPC1700-0510 VHM/TIALN	17,00	18,00	123,0	73	51,00
SPC1750-0525 VHM/TIALN	17,50	18,00	123,0	73	52,50
SPC1780-0534 VHM/TIALN	17,80	18,00	123,0	73	53,40
SPC1800-0540 VHM/TIALN	18,00	18,00	123,0	73	54,00
SPC1850-0555 VHM/TIALN	18,50	20,00	131,0	73	55,50
SPC1880-0564 VHM/TIALN	18,80	20,00	131,0	79	56,40
SPC1890-0567 VHM/TIALN	18,90	20,00	131,0	79	56,70
SPC1900-0570 VHM/TIALN	19,00	20,00	131,0	79	57,00
SPC1950-0585 VHM/TIALN	19,50	20,00	131,0	79	58,50
SPC1980-0594 VHM/TIALN	19,80	20,00	131,0	79	59,40
SPC2000-0600 VHM/TIALN	20,00	20,00	131,0	79	60,00

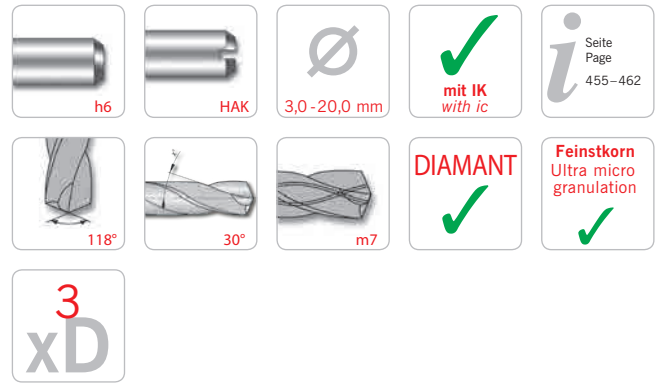
Vollhartmetall-Spiralbohrer

Kurze Ausführung, mit Innenkühlung, Diamant beschichtet



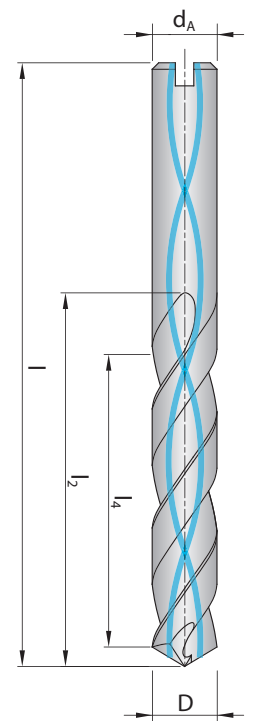
Solid carbide drills

Short design, with through tool coolant, diamond coated



Ausführung 3 x D für Aluminium / Execution 3 x D for aluminium

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0300-0090-ALU VHM/DLC	3,00	6,00	62,0	20	9,00
SPC0310-0093-ALU VHM/DLC	3,10	6,00	62,0	20	9,30
SPC0320-0096-ALU VHM/DLC	3,20	6,00	62,0	20	9,60
SPC0330-0099-ALU VHM/DLC	3,30	6,00	62,0	20	9,90
SPC0340-0102-ALU VHM/DLC	3,40	6,00	62,0	20	10,20
SPC0350-0105-ALU VHM/DLC	3,50	6,00	62,0	20	10,50
SPC0360-0108-ALU VHM/DLC	3,60	6,00	62,0	20	10,80
SPC0370-0111-ALU VHM/DLC	3,70	6,00	62,0	20	11,10
SPC0380-0114-ALU VHM/DLC	3,80	6,00	66,0	24	11,40
SPC0390-0117-ALU VHM/DLC	3,90	6,00	66,0	24	11,70
SPC0400-0120-ALU VHM/DLC	4,00	6,00	66,0	24	12,00
SPC0410-0123-ALU VHM/DLC	4,10	6,00	66,0	24	12,30
SPC0420-0126-ALU VHM/DLC	4,20	6,00	66,0	24	12,60
SPC0430-0129-ALU VHM/DLC	4,30	6,00	66,0	24	12,90
SPC0440-0132-ALU VHM/DLC	4,40	6,00	66,0	24	13,20
SPC0450-0135-ALU VHM/DLC	4,50	6,00	66,0	24	13,50
SPC0460-0138-ALU VHM/DLC	4,60	6,00	66,0	24	13,80
SPC0470-0141-ALU VHM/DLC	4,70	6,00	66,0	24	14,10
SPC0480-0144-ALU VHM/DLC	4,80	6,00	66,0	28	14,40
SPC0490-0147-ALU VHM/DLC	4,90	6,00	66,0	28	14,70
SPC0500-0150-ALU VHM/DLC	5,00	6,00	66,0	28	15,00
SPC0510-0153-ALU VHM/DLC	5,10	6,00	66,0	28	15,30
SPC0520-0156-ALU VHM/DLC	5,20	6,00	66,0	28	15,60
SPC0530-0159-ALU VHM/DLC	5,30	6,00	66,0	28	15,90
SPC0540-0162-ALU VHM/DLC	5,40	6,00	66,0	28	16,20
SPC0550-0165-ALU VHM/DLC	5,50	6,00	66,0	28	16,50
SPC0560-0168-ALU VHM/DLC	5,60	6,00	66,0	28	16,80
SPC0570-0171-ALU VHM/DLC	5,70	6,00	66,0	28	17,10
SPC0580-0174-ALU VHM/DLC	5,80	6,00	66,0	28	17,40
SPC0590-0177-ALU VHM/DLC	5,90	6,00	66,0	28	17,70
SPC0600-0180-ALU VHM/DLC	6,00	6,00	66,0	28	18,00
SPC0610-0183-ALU VHM/DLC	6,10	8,00	79,0	34	18,30
SPC0620-0186-ALU VHM/DLC	6,20	8,00	79,0	34	18,60
SPC0630-0189-ALU VHM/DLC	6,30	8,00	79,0	34	18,90
SPC0640-0192-ALU VHM/DLC	6,40	8,00	79,0	34	19,20
SPC0650-0195-ALU VHM/DLC	6,50	8,00	79,0	34	19,50
SPC0660-0198-ALU VHM/DLC	6,60	8,00	79,0	34	19,80
SPC0670-0201-ALU VHM/DLC	6,70	8,00	79,0	34	20,10
SPC0680-0204-ALU VHM/DLC	6,80	8,00	79,0	34	20,40
SPC0690-0207-ALU VHM/DLC	6,90	8,00	79,0	34	20,70
SPC0700-0210-ALU VHM/DLC	7,00	8,00	79,0	34	21,00
SPC0710-0213-ALU VHM/DLC	7,10	8,00	79,0	41	21,30



Vollhartmetall-Spiralbohrer

Kurze Ausführung, mit Innenkühlung, Diamant beschichtet

Solid carbide drills

Short design, with through tool coolant, diamond coated

Ausführung 3 x D für Aluminium / Execution 3 x D for aluminium

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0720-0216-ALU VHM/DLC	7,20	8,00	79,0	41	21,60
SPC0730-0219-ALU VHM/DLC	7,30	8,00	79,0	41	21,90
SPC0740-0222-ALU VHM/DLC	7,40	8,00	79,0	41	22,20
SPC0750-0225-ALU VHM/DLC	7,50	8,00	79,0	41	22,50
SPC0760-0228-ALU VHM/DLC	7,60	8,00	79,0	41	22,80
SPC0770-0231-ALU VHM/DLC	7,70	8,00	79,0	41	23,10
SPC0780-0234-ALU VHM/DLC	7,80	8,00	79,0	41	23,40
SPC0790-0237-ALU VHM/DLC	7,90	8,00	79,0	41	23,70
SPC0800-0240-ALU VHM/DLC	8,00	10,00	79,0	41	24,00
SPC0810-0243-ALU VHM/DLC	8,10	10,00	89,0	47	24,30
SPC0820-0246-ALU VHM/DLC	8,20	10,00	89,0	47	24,60
SPC0830-0249-ALU VHM/DLC	8,30	10,00	89,0	47	24,90
SPC0840-0252-ALU VHM/DLC	8,40	10,00	89,0	47	25,20
SPC0850-0255-ALU VHM/DLC	8,50	10,00	89,0	47	25,50
SPC0860-0258-ALU VHM/DLC	8,60	10,00	89,0	47	25,80
SPC0870-0261-ALU VHM/DLC	8,70	10,00	89,0	47	26,10
SPC0880-0264-ALU VHM/DLC	8,80	10,00	89,0	47	26,40
SPC0890-0267-ALU VHM/DLC	8,90	10,00	89,0	47	26,70
SPC0900-0270-ALU VHM/DLC	9,00	10,00	89,0	47	27,00
SPC0910-0273-ALU VHM/DLC	9,10	10,00	89,0	47	27,30
SPC0920-0276-ALU VHM/DLC	9,20	10,00	89,0	47	27,60
SPC0930-0279-ALU VHM/DLC	9,30	10,00	89,0	47	27,90
SPC0940-0282-ALU VHM/DLC	9,40	10,00	89,0	47	28,20
SPC0950-0285-ALU VHM/DLC	9,50	10,00	89,0	47	28,50
SPC0960-0288-ALU VHM/DLC	9,60	10,00	89,0	47	28,80
SPC0970-0291-ALU VHM/DLC	9,70	10,00	89,0	47	29,10
SPC0980-0294-ALU VHM/DLC	9,80	10,00	89,0	47	29,40
SPC0990-0297-ALU VHM/DLC	9,90	10,00	89,0	55	29,70
SPC1000-0300-ALU VHM/DLC	10,00	10,00	89,0	55	30,00
SPC1010-0303-ALU VHM/DLC	10,10	12,00	102,0	55	30,30
SPC1020-0306-ALU VHM/DLC	10,20	12,00	102,0	55	30,60
SPC1030-0309-ALU VHM/DLC	10,30	12,00	102,0	55	30,90
SPC1040-0312-ALU VHM/DLC	10,40	12,00	102,0	55	31,20
SPC1050-0315-ALU VHM/DLC	10,50	12,00	102,0	55	31,50
SPC1060-0318-ALU VHM/DLC	10,60	12,00	102,0	55	31,80
SPC1070-0321-ALU VHM/DLC	10,70	12,00	102,0	55	32,10
SPC1080-0324-ALU VHM/DLC	10,80	12,00	102,0	55	32,40
SPC1090-0327-ALU VHM/DLC	10,90	12,00	102,0	55	32,70
SPC1100-0330-ALU VHM/DLC	11,00	12,00	102,0	55	33,00
SPC1110-0333-ALU VHM/DLC	11,10	12,00	102,0	55	33,30
SPC1120-0336-ALU VHM/DLC	11,20	12,00	102,0	55	33,60
SPC1130-0339-ALU VHM/DLC	11,30	12,00	102,0	55	33,90
SPC1140-0342-ALU VHM/DLC	11,40	12,00	102,0	55	34,20
SPC1150-0345-ALU VHM/DLC	11,50	12,00	102,0	55	34,50
SPC1160-0348-ALU VHM/DLC	11,60	12,00	102,0	55	34,80
SPC1170-0351-ALU VHM/DLC	11,70	12,00	102,0	55	35,10
SPC1180-0354-ALU VHM/DLC	11,80	12,00	102,0	55	35,40
SPC1190-0357-ALU VHM/DLC	11,90	12,00	102,0	55	35,70
SPC1200-0360-ALU VHM/DLC	12,00	12,00	102,0	55	36,00
SPC1250-0375-ALU VHM/DLC	12,50	14,00	107,0	60	37,50
SPC1280-0384-ALU VHM/DLC	12,80	14,00	107,0	60	38,40
SPC1300-0390-ALU VHM/DLC	13,00	14,00	107,0	60	39,00
SPC1350-0405-ALU VHM/DLC	13,50	14,00	107,0	60	40,50
SPC1380-0414-ALU VHM/DLC	13,80	14,00	107,0	60	41,40
SPC1400-0420-ALU VHM/DLC	14,00	14,00	107,0	60	42,00
SPC1420-0426-ALU VHM/DLC	14,20	16,00	115,0	65	42,60
SPC1450-0435-ALU VHM/DLC	14,50	16,00	115,0	65	43,50
SPC1500-0450-ALU VHM/DLC	15,00	16,00	115,0	65	45,00

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC1550-0465-ALU VHM/DLC	15,50	16,00	115,0	65	46,50
SPC1580-0474-ALU VHM/DLC	15,80	16,00	115,0	65	47,40
SPC1600-0480-ALU VHM/DLC	16,00	16,00	115,0	65	48,00
SPC1650-0495-ALU VHM/DLC	16,50	18,00	123,0	73	49,50
SPC1680-0504-ALU VHM/DLC	16,80	18,00	123,0	73	50,40
SPC1700-0510-ALU VHM/DLC	17,00	18,00	123,0	73	51,00
SPC1750-0525-ALU VHM/DLC	17,50	18,00	123,0	73	52,50
SPC1780-0534-ALU VHM/DLC	17,80	18,00	123,0	73	53,40
SPC1800-0540-ALU VHM/DLC	18,00	18,00	123,0	73	54,00
SPC1850-0555-ALU VHM/DLC	18,50	20,00	131,0	79	55,50
SPC1880-0564-ALU VHM/DLC	18,80	20,00	131,0	79	56,40
SPC1900-0570-ALU VHM/DLC	19,00	20,00	131,0	79	57,00
SPC1950-0585-ALU VHM/DLC	19,50	20,00	131,0	79	58,50
SPC1980-0594-ALU VHM/DLC	19,80	20,00	131,0	79	59,40
SPC2000-0600-ALU VHM/DLC	20,00	20,00	131,0	79	60,00

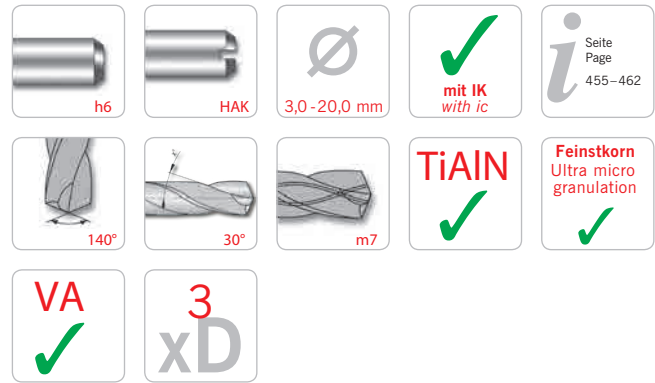
Vollhartmetall-Spiralbohrer

Kurze Ausführung, mit Innenkühlung



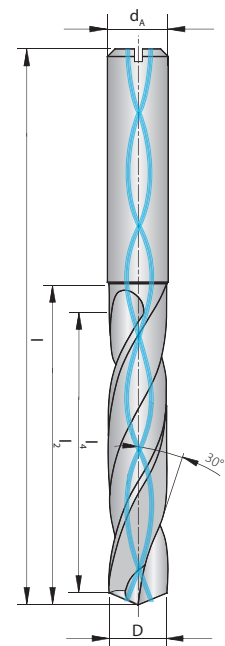
Solid carbide drills

Short design, with through tool coolant



Ausführung 3 x D für rostfreie Stähle / Execution 3 x D for stainless steel

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0300-0090-VA VHM/TIALN	3,00	6,00	62,0	20	9,00
SPC0310-0093-VA VHM/TIALN	3,10	6,00	62,0	20	9,30
SPC0320-0096-VA VHM/TIALN	3,20	6,00	62,0	20	9,60
SPC0330-0099-VA VHM/TIALN	3,30	6,00	62,0	20	9,90
SPC0340-0102-VA VHM/TIALN	3,40	6,00	62,0	20	10,20
SPC0350-0105-VA VHM/TIALN	3,50	6,00	62,0	20	10,50
SPC0360-0108-VA VHM/TIALN	3,60	6,00	62,0	20	10,80
SPC0370-0111-VA VHM/TIALN	3,70	6,00	62,0	20	11,10
SPC0380-0114-VA VHM/TIALN	3,80	6,00	66,0	24	11,40
SPC0390-0117-VA VHM/TIALN	3,90	6,00	66,0	24	11,70
SPC0400-0120-VA VHM/TIALN	4,00	6,00	66,0	24	12,00
SPC0410-0123-VA VHM/TIALN	4,10	6,00	66,0	24	12,30
SPC0420-0126-VA VHM/TIALN	4,20	6,00	66,0	24	12,60
SPC0430-0129-VA VHM/TIALN	4,30	6,00	66,0	24	12,90
SPC0440-0132-VA VHM/TIALN	4,40	6,00	66,0	24	13,20
SPC0450-0135-VA VHM/TIALN	4,50	6,00	66,0	24	13,50
SPC0460-0138-VA VHM/TIALN	4,60	6,00	66,0	24	13,80
SPC0470-0141-VA VHM/TIALN	4,70	6,00	66,0	24	14,10
SPC0480-0144-VA VHM/TIALN	4,80	6,00	66,0	28	14,40
SPC0490-0147-VA VHM/TIALN	4,90	6,00	66,0	28	14,70
SPC0500-0150-VA VHM/TIALN	5,00	6,00	66,0	28	15,00
SPC0510-0153-VA VHM/TIALN	5,10	6,00	66,0	28	15,30
SPC0520-0156-VA VHM/TIALN	5,20	6,00	66,0	28	15,60
SPC0530-0159-VA VHM/TIALN	5,30	6,00	66,0	28	15,90
SPC0540-0162-VA VHM/TIALN	5,40	6,00	66,0	28	16,20
SPC0550-0165-VA VHM/TIALN	5,50	6,00	66,0	28	16,50
SPC0560-0168-VA VHM/TIALN	5,60	6,00	66,0	28	16,80
SPC0570-0171-VA VHM/TIALN	5,70	6,00	66,0	28	17,10
SPC0580-0174-VA VHM/TIALN	5,80	6,00	66,0	28	17,40
SPC0590-0177-VA VHM/TIALN	5,90	6,00	66,0	28	17,70
SPC0600-0180-VA VHM/TIALN	6,00	6,00	66,0	28	18,00
SPC0610-0183-VA VHM/TIALN	6,10	8,00	79,0	34	18,30
SPC0620-0186-VA VHM/TIALN	6,20	8,00	79,0	34	18,60
SPC0630-0189-VA VHM/TIALN	6,30	8,00	79,0	34	18,90
SPC0640-0192-VA VHM/TIALN	6,40	8,00	79,0	34	19,20
SPC0650-0195-VA VHM/TIALN	6,50	8,00	79,0	34	19,50
SPC0660-0198-VA VHM/TIALN	6,60	8,00	79,0	34	19,80
SPC0670-0201-VA VHM/TIALN	6,70	8,00	79,0	34	20,10
SPC0680-0204-VA VHM/TIALN	6,80	8,00	79,0	34	20,40
SPC0690-0207-VA VHM/TIALN	6,90	8,00	79,0	34	20,70
SPC0700-0210-VA VHM/TIALN	7,00	8,00	79,0	34	21,00
SPC0710-0213-VA VHM/TIALN	7,10	8,00	79,0	41	21,30



Vollhartmetall-Spiralbohrer

Kurze Ausführung, mit Innenkühlung

Solid carbide drills

Short design, with through tool coolant

Ausführung 3 x D für rostfreie Stähle / Execution 3 x D for stainless steel

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0720-0216-VA VHM/TIALN	7,20	8,00	79,0	41	21,60
SPC0730-0219-VA VHM/TIALN	7,30	8,00	79,0	41	21,90
SPC0740-0222-VA VHM/TIALN	7,40	8,00	79,0	41	22,20
SPC0750-0225-VA VHM/TIALN	7,50	8,00	79,0	41	22,50
SPC0760-0228-VA VHM/TIALN	7,60	8,00	79,0	41	22,80
SPC0770-0231-VA VHM/TIALN	7,70	8,00	79,0	41	23,10
SPC0780-0234-VA VHM/TIALN	7,80	8,00	79,0	41	23,40
SPC0790-0237-VA VHM/TIALN	7,90	8,00	79,0	41	23,70
SPC0800-0240-VA VHM/TIALN	8,00	8,00	79,0	41	24,00
SPC0810-0243-VA VHM/TIALN	8,10	10,00	89,0	47	24,30
SPC0820-0246-VA VHM/TIALN	8,20	10,00	89,0	47	24,60
SPC0830-0249-VA VHM/TIALN	8,30	10,00	89,0	47	24,90
SPC0840-0252-VA VHM/TIALN	8,40	10,00	89,0	47	25,20
SPC0850-0255-VA VHM/TIALN	8,50	10,00	89,0	47	25,50
SPC0860-0258-VA VHM/TIALN	8,60	10,00	89,0	47	25,80
SPC0870-0261-VA VHM/TIALN	8,70	10,00	89,0	47	26,10
SPC0880-0264-VA VHM/TIALN	8,80	10,00	89,0	47	26,40
SPC0890-0267-VA VHM/TIALN	8,90	10,00	89,0	47	26,70
SPC0900-0270-VA VHM/TIALN	9,00	10,00	89,0	47	27,00
SPC0910-0273-VA VHM/TIALN	9,10	10,00	89,0	47	27,30
SPC0920-0276-VA VHM/TIALN	9,20	10,00	89,0	47	27,60
SPC0930-0279-VA VHM/TIALN	9,30	10,00	89,0	47	27,90
SPC0940-0282-VA VHM/TIALN	9,40	10,00	89,0	47	28,20
SPC0950-0285-VA VHM/TIALN	9,50	10,00	89,0	47	28,50
SPC0960-0288-VA VHM/TIALN	9,60	10,00	89,0	47	28,80
SPC0970-0291-VA VHM/TIALN	9,70	10,00	89,0	47	29,10
SPC0980-0294-VA VHM/TIALN	9,80	10,00	89,0	47	29,40
SPC0990-0297-VA VHM/TIALN	9,90	10,00	89,0	47	29,70
SPC1000-0300-VA VHM/TIALN	10,00	10,00	89,0	47	30,00
SPC1010-0303-VA VHM/TIALN	10,10	12,00	102,0	55	30,30
SPC1020-0306-VA VHM/TIALN	10,20	12,00	102,0	55	30,60
SPC1030-0309-VA VHM/TIALN	10,30	12,00	102,0	55	30,90
SPC1040-0312-VA VHM/TIALN	10,40	12,00	102,0	55	31,20
SPC1050-0315-VA VHM/TIALN	10,50	12,00	102,0	55	31,50
SPC1060-0318-VA VHM/TIALN	10,60	12,00	102,0	55	31,80
SPC1070-0321-VA VHM/TIALN	10,70	12,00	102,0	55	32,10
SPC1080-0324-VA VHM/TIALN	10,80	12,00	102,0	55	32,40
SPC1090-0327-VA VHM/TIALN	10,90	12,00	102,0	55	32,70
SPC1100-0330-VA VHM/TIALN	11,00	12,00	102,0	55	33,00
SPC1110-0333-VA VHM/TIALN	11,10	12,00	102,0	55	33,30
SPC1120-0336-VA VHM/TIALN	11,20	12,00	102,0	55	33,60
SPC1130-0339-VA VHM/TIALN	11,30	12,00	102,0	55	33,90
SPC1140-0342-VA VHM/TIALN	11,40	12,00	102,0	55	34,20
SPC1150-0345-VA VHM/TIALN	11,50	12,00	102,0	55	34,50
SPC1160-0348-VA VHM/TIALN	11,60	12,00	102,0	55	34,80
SPC1170-0351-VA VHM/TIALN	11,70	12,00	102,0	55	35,10
SPC1180-0354-VA VHM/TIALN	11,80	12,00	102,0	55	35,40
SPC1190-0357-VA VHM/TIALN	11,90	12,00	102,0	55	35,70
SPC1200-0360-VA VHM/TIALN	12,00	12,00	102,0	55	36,00
SPC1250-0375-VA VHM/TIALN	12,50	14,00	107,0	60	37,50
SPC1300-0390-VA VHM/TIALN	13,00	14,00	107,0	60	39,00
SPC1350-0405-VA VHM/TIALN	13,50	14,00	107,0	60	40,50
SPC1400-0420-VA VHM/TIALN	14,00	14,00	107,0	60	42,00
SPC1450-0435-VA VHM/TIALN	14,50	16,00	115,0	65	43,50
SPC1500-0450-VA VHM/TIALN	15,00	16,00	115,0	65	45,00
SPC1550-0465-VA VHM/TIALN	15,50	16,00	115,0	65	46,50
SPC1600-0480-VA VHM/TIALN	16,00	16,00	115,0	65	48,00
SPC1650-0495-VA VHM/TIALN	16,50	18,00	123,0	73	49,50

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC1700-0510-VA VHM/TIALN	17,00	18,00	123,0	73	51,00
SPC1750-0525-VA VHM/TIALN	17,50	18,00	123,0	73	52,50
SPC1800-0540-VA VHM/TIALN	18,00	18,00	123,0	73	54,00
SPC1850-0555-VA VHM/TIALN	18,50	20,00	131,0	79	55,50
SPC1900-0570-VA VHM/TIALN	19,00	20,00	131,0	79	57,00
SPC1950-0585-VA VHM/TIALN	19,50	20,00	131,0	79	58,50
SPC2000-0600-VA VHM/TIALN	20,00	20,00	131,0	79	60,00

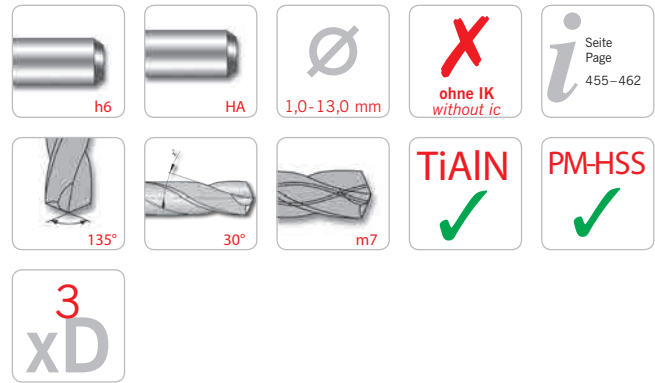
PM-HSS Spiralbohrer

Kurze Ausführung, ohne Innenkühlung



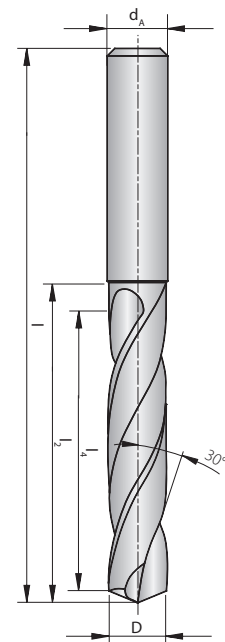
Powder metal drills

Short design, without through tool coolant



Ausführung 3 x D Pulvermetallurgisches HSS / Execution 3 x D powder metal drill

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0010-0030-PM TIALN	1,00	3,00	38,0	6	3,00
SP0011-0033-PM TIALN	1,10	3,00	39,0	7	3,30
SP0012-0036-PM TIALN	1,20	3,00	40,0	8	3,60
SP0013-0039-PM TIALN	1,30	3,00	40,0	8	3,90
SP0014-0042-PM TIALN	1,40	3,00	41,0	9	4,20
SP0015-0045-PM TIALN	1,50	3,00	41,0	9	4,50
SP0016-0048-PM TIALN	1,60	3,00	42,0	10	4,80
SP0017-0051-PM TIALN	1,70	3,00	42,0	10	5,10
SP0018-0054-PM TIALN	1,80	3,00	43,0	11	5,40
SP0019-0057-PM TIALN	1,90	3,00	43,0	11	5,70
SP0020-0060-PM TIALN	2,00	3,00	44,0	12	6,00
SP0021-0063-PM TIALN	2,10	3,00	44,0	12	6,30
SP0022-0066-PM TIALN	2,20	3,00	45,0	13	6,60
SP0023-0069-PM TIALN	2,30	3,00	45,0	13	6,90
SP0024-0072-PM TIALN	2,40	3,00	46,0	14	7,20
SP0025-0075-PM TIALN	2,50	3,00	46,0	14	7,50
SP0026-0078-PM TIALN	2,60	3,00	46,0	14	7,80
SP0027-0081-PM TIALN	2,70	3,00	48,0	16	8,10
SP0028-0084-PM TIALN	2,80	3,00	48,0	16	8,40
SP0029-0087-PM TIALN	2,90	3,00	48,0	16	8,70
SP0030-0090-PM TIALN	3,00	3,00	48,0	16	9,00
SP0031-0093-PM TIALN	3,10	4,00	50,0	18	9,30
SP0032-0096-PM TIALN	3,20	4,00	50,0	18	9,60
SP0033-0099-PM TIALN	3,30	4,00	50,0	18	9,90
SP0034-0102-PM TIALN	3,40	4,00	52,0	20	10,20
SP0035-0105-PM TIALN	3,50	4,00	52,0	20	10,50
SP0036-0108-PM TIALN	3,60	4,00	52,0	20	10,80
SP0037-0111-PM TIALN	3,70	4,00	52,0	20	11,10
SP0038-0114-PM TIALN	3,80	4,00	54,0	22	11,40
SP0039-0117-PM TIALN	3,90	4,00	54,0	22	11,70
SP0040-0120-PM TIALN	4,00	4,00	54,0	22	12,00
SP0041-0123-PM TIALN	4,10	6,00	66,0	22	12,30
SP0042-0126-PM TIALN	4,20	6,00	66,0	22	12,60
SP0043-0129-PM TIALN	4,30	6,00	68,0	24	12,90
SP0044-0132-PM TIALN	4,40	6,00	68,0	24	13,20
SP0045-0135-PM TIALN	4,50	6,00	68,0	24	13,50
SP0046-0138-PM TIALN	4,60	6,00	68,0	24	13,80
SP0047-0141-PM TIALN	4,70	6,00	68,0	24	14,10
SP0048-0144-PM TIALN	4,80	6,00	70,0	26	14,40
SP0049-0147-PM TIALN	4,90	6,00	70,0	26	14,70
SP0050-0150-PM TIALN	5,00	6,00	70,0	26	15,00
SP0051-0153-PM TIALN	5,10	6,00	70,0	26	15,30



PM-HSS Spiralbohrer


Kurze Ausführung, ohne Innenkühlung

Powder metal drills

Short design, without through tool coolant

Ausführung 3 x D Pulvermetallurgisches HSS / Execution 3 x D powder metal drill

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0052-0156-PM TIALN	5,20	6,00	70,0	26	15,60
SP0053-0159-PM TIALN	5,30	6,00	70,0	26	15,90
SP0054-0162-PM TIALN	5,40	6,00	72,0	28	16,20
SP0055-0165-PM TIALN	5,50	6,00	72,0	28	16,50
SP00555-01665-PM TIALN 	5,55	6,00	72,0	28	16,65
SP0056-0168-PM TIALN	5,60	6,00	72,0	28	16,80
SP0057-0171-PM TIALN	5,70	6,00	72,0	28	17,10
SP0058-0174-PM TIALN	5,80	6,00	72,0	28	17,40
SP0059-0177-PM TIALN	5,90	6,00	72,0	28	17,70
SP0060-0180-PM TIALN	6,00	6,00	72,0	28	18,00
SP0061-0183-PM TIALN	6,10	8,00	75,0	31	18,30
SP0062-0186-PM TIALN	6,20	8,00	75,0	31	18,60
SP0063-0189-PM TIALN	6,30	8,00	75,0	31	18,90
SP0064-0192-PM TIALN	6,40	8,00	75,0	31	19,20
SP0065-0195-PM TIALN	6,50	8,00	75,0	31	19,50
SP0066-0198-PM TIALN	6,60	8,00	75,0	31	19,80
SP0067-0201-PM TIALN	6,70	8,00	75,0	31	20,10
SP0068-0204-PM TIALN	6,80	8,00	78,0	34	20,40
SP0069-0207-PM TIALN	6,90	8,00	78,0	34	20,70
SP0070-0210-PM TIALN	7,00	8,00	78,0	34	21,00
SP0071-0213-PM TIALN	7,10	8,00	78,0	34	21,30
SP0072-0216-PM TIALN	7,20	8,00	78,0	34	21,60
SP0073-0219-PM TIALN	7,30	8,00	78,0	34	21,90
SP0074-0222-PM TIALN	7,40	8,00	78,0	34	22,20
SP0075-0225-PM TIALN	7,50	8,00	78,0	34	22,50
SP0076-0228-PM TIALN	7,60	8,00	81,0	37	22,80
SP0077-0231-PM TIALN	7,70	8,00	81,0	37	23,10
SP0078-0234-PM TIALN	7,80	8,00	81,0	37	23,40
SP0079-0237-PM TIALN	7,90	8,00	81,0	37	23,70
SP0080-0240-PM TIALN	8,00	8,00	81,0	37	24,00
SP0081-0243-PM TIALN	8,10	10,00	87,0	37	24,30
SP0082-0246-PM TIALN	8,20	10,00	87,0	37	24,60
SP0083-0249-PM TIALN	8,30	10,00	87,0	37	24,90
SP0084-0252-PM TIALN	8,40	10,00	87,0	37	25,20
SP0085-0255-PM TIALN	8,50	10,00	87,0	37	25,50
SP0086-0258-PM TIALN	8,60	10,00	90,0	40	25,80
SP0087-0261-PM TIALN	8,70	10,00	90,0	40	26,10
SP0088-0264-PM TIALN	8,80	10,00	90,0	40	26,40
SP0089-0267-PM TIALN	8,90	10,00	90,0	40	26,70
SP0090-0270-PM TIALN	9,00	10,00	90,0	40	27,00
SP0091-0273-PM TIALN	9,10	10,00	90,0	40	27,30
SP0092-0276-PM TIALN	9,20	10,00	90,0	40	27,60
SP0093-0279-PM TIALN	9,30	10,00	90,0	40	27,90
SP0094-0282-PM TIALN	9,40	10,00	90,0	40	28,20
SP0095-0285-PM TIALN	9,50	10,00	90,0	40	28,50
SP0096-0288-PM TIALN	9,60	10,00	93,0	43	28,80
SP0097-0291-PM TIALN	9,70	10,00	93,0	43	29,10
SP0098-0294-PM TIALN	9,80	10,00	93,0	43	29,40
SP0099-0297-PM TIALN	9,90	10,00	93,0	43	29,70
SP0100-0300-PM TIALN	10,00	10,00	93,0	43	30,00
SP0101-0303-PM TIALN	10,10	12,00	100,0	43	30,30
SP0102-0306-PM TIALN	10,20	12,00	100,0	43	30,60
SP0103-0309-PM TIALN	10,30	12,00	100,0	43	30,90
SP0104-0312-PM TIALN	10,40	12,00	100,0	43	31,20
SP0105-0315-PM TIALN	10,50	12,00	100,0	43	31,50
SP0106-0318-PM TIALN	10,60	12,00	100,0	43	31,80
SP0107-0321-PM TIALN	10,70	12,00	104,0	47	32,10
SP0108-0324-PM TIALN	10,80	12,00	104,0	47	32,40

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0109-0327-PM TIALN	10,90	12,00	104,0	47	32,70
SP0110-0330-PM TIALN	11,00	12,00	104,0	47	33,00
SP0111-0333-PM TIALN	11,10	12,00	104,0	47	33,30
SP0112-0336-PM TIALN	11,20	12,00	104,0	47	33,60
SP0113-0339-PM TIALN	11,30	12,00	104,0	47	33,90
SP0114-0342-PM TIALN	11,40	12,00	104,0	47	34,20
SP0115-0345-PM TIALN	11,50	12,00	104,0	47	34,50
SP0116-0348-PM TIALN	11,60	12,00	104,0	47	34,80
SP0117-0351-PM TIALN	11,70	12,00	104,0	47	35,10
SP0118-0354-PM TIALN	11,80	12,00	104,0	47	35,40
SP0119-0357-PM TIALN	11,90	12,00	108,0	51	35,70
SP0120-0360-PM TIALN	12,00	12,00	108,0	51	36,00
SP0121-0363-PM TIALN	12,10	12,00	108,0	51	36,30
SP0122-0366-PM TIALN	12,20	12,00	108,0	51	36,60
SP0123-0369-PM TIALN	12,30	12,00	108,0	51	36,90
SP0124-0372-PM TIALN	12,40	12,00	108,0	51	37,20
SP0125-0375-PM TIALN	12,50	12,00	108,0	51	37,50
SP0126-0378-PM TIALN	12,60	12,00	108,0	51	37,80
SP0127-0381-PM TIALN	12,70	12,00	108,0	51	38,10
SP0128-0384-PM TIALN	12,80	12,00	108,0	51	38,40
SP0129-0387-PM TIALN	12,90	12,00	108,0	51	38,70
SP0130-0390-PM TIALN	13,00	12,00	108,0	51	39,00
SP0133-0399-PM TIALN 	13,30	12,00	108,0	51	39,90

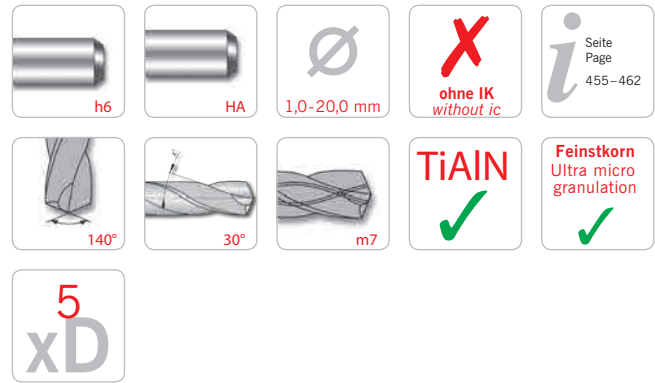
Vollhartmetall-Spiralbohrer

Mittellange Ausführung, ohne Innenkühlung



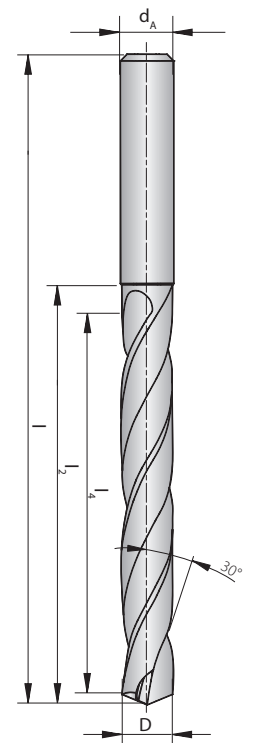
Solid carbide drills

Mid-length design, without through tool coolant



Ausführung 5 x D / Execution 5 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0010-0050 VHM/TIALN	1,00	3,00	55,0	8	5,00
SP0011-0055 VHM/TIALN	1,10	3,00	55,0	12	5,50
SP0012-0060 VHM/TIALN	1,20	3,00	55,0	12	6,00
SP0013-0065 VHM/TIALN	1,30	3,00	55,0	12	6,50
SP0014-0070 VHM/TIALN	1,40	3,00	55,0	12	7,00
SP0015-0075 VHM/TIALN	1,50	3,00	55,0	16	7,50
SP0016-0080 VHM/TIALN	1,60	3,00	55,0	16	8,00
SP0017-0085 VHM/TIALN	1,70	3,00	55,0	16	8,50
SP0018-0090 VHM/TIALN	1,80	3,00	55,0	16	9,00
SP0019-0095 VHM/TIALN	1,90	3,00	55,0	16	9,50
SP0020-0100 VHM/TIALN	2,00	4,00	57,0	21	10,00
SP0021-0105 VHM/TIALN	2,10	4,00	57,0	21	10,50
SP0022-0110 VHM/TIALN	2,20	4,00	57,0	21	11,00
SP0023-0115 VHM/TIALN	2,30	4,00	57,0	21	11,50
SP0024-0120 VHM/TIALN	2,40	4,00	57,0	21	12,00
SP0025-0125 VHM/TIALN	2,50	4,00	57,0	21	12,50
SP0026-0130 VHM/TIALN	2,60	4,00	57,0	21	13,00
SP0027-0135 VHM/TIALN	2,70	4,00	57,0	21	13,50
SP0028-0140 VHM/TIALN	2,80	4,00	57,0	21	14,00
SP0029-0145 VHM/TIALN	2,90	4,00	57,0	21	14,50
SP0030-0150 VHM/TIALN	3,00	6,00	66,0	28	15,00
SP0031-0155 VHM/TIALN	3,10	6,00	66,0	28	15,50
SP0032-0160 VHM/TIALN	3,20	6,00	66,0	28	16,00
SP0033-0165 VHM/TIALN	3,30	6,00	66,0	28	16,50
SP0034-0170 VHM/TIALN	3,40	6,00	66,0	28	17,00
SP0035-0175 VHM/TIALN	3,50	6,00	66,0	28	17,50
SP0036-0180 VHM/TIALN	3,60	6,00	66,0	28	18,00
SP0037-0185 VHM/TIALN	3,70	6,00	66,0	28	18,50
SP0038-0190 VHM/TIALN	3,80	6,00	74,0	36	19,00
SP0039-0195 VHM/TIALN	3,90	6,00	74,0	36	19,50
SP0040-0200 VHM/TIALN	4,00	6,00	74,0	36	20,00
SP0041-0205 VHM/TIALN	4,10	6,00	74,0	36	20,50
SP0042-0210 VHM/TIALN	4,20	6,00	74,0	36	21,00
SP0043-0215 VHM/TIALN	4,30	6,00	74,0	36	21,50
SP0044-0220 VHM/TIALN	4,40	6,00	74,0	36	22,00
SP0045-0225 VHM/TIALN	4,50	6,00	74,0	36	22,50
SP0046-0230 VHM/TIALN	4,60	6,00	74,0	36	23,00
SP0047-0235 VHM/TIALN	4,70	6,00	74,0	36	23,50
SP0048-0240 VHM/TIALN	4,80	6,00	82,0	44	24,00
SP0049-0245 VHM/TIALN	4,90	6,00	82,0	44	24,50
SP0050-0250 VHM/TIALN	5,00	6,00	82,0	44	25,00
SP0051-0255 VHM/TIALN	5,10	6,00	82,0	44	25,50



Vollhartmetall-Spiralbohrer

Mittellange Ausführung, ohne Innenkühlung

Ausführung 5 x D / Execution 5 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0052-0260 VHM/TIALN	5,20	6,00	82,0	44	26,00
SP0053-0265 VHM/TIALN	5,30	6,00	82,0	44	26,50
SP0054-0270 VHM/TIALN	5,40	6,00	82,0	44	27,00
SP0055-0275 VHM/TIALN	5,50	6,00	82,0	44	27,50
SP0056-0280 VHM/TIALN	5,60	6,00	82,0	44	28,00
SP0057-0285 VHM/TIALN	5,70	6,00	82,0	44	28,50
SP0058-0290 VHM/TIALN	5,80	6,00	82,0	44	29,00
SP0059-0295 VHM/TIALN	5,90	6,00	82,0	44	29,50
SP0060-0300 VHM/TIALN	6,00	6,00	82,0	44	30,00
SP0061-0305 VHM/TIALN	6,10	8,00	91,0	53	30,50
SP0062-0310 VHM/TIALN	6,20	8,00	91,0	53	31,00
SP0063-0315 VHM/TIALN	6,30	8,00	91,0	53	31,50
SP0064-0320 VHM/TIALN	6,40	8,00	91,0	53	32,00
SP0065-0325 VHM/TIALN	6,50	8,00	91,0	53	32,50
SP0066-0330 VHM/TIALN	6,60	8,00	91,0	53	33,00
SP0067-0335 VHM/TIALN	6,70	8,00	91,0	53	33,50
SP0068-0340 VHM/TIALN	6,80	8,00	91,0	53	34,00
SP0069-0345 VHM/TIALN	6,90	8,00	91,0	53	34,50
SP0070-0350 VHM/TIALN	7,00	8,00	91,0	53	35,00
SP0071-0355 VHM/TIALN	7,10	8,00	91,0	53	35,50
SP0072-0360 VHM/TIALN	7,20	8,00	91,0	53	36,00
SP0073-0365 VHM/TIALN	7,30	8,00	91,0	53	36,50
SP0074-0370 VHM/TIALN	7,40	8,00	91,0	53	37,00
SP0075-0375 VHM/TIALN	7,50	8,00	91,0	53	37,50
SP0076-0380 VHM/TIALN	7,60	8,00	91,0	53	38,00
SP0077-0385 VHM/TIALN	7,70	8,00	91,0	53	38,50
SP0078-0390 VHM/TIALN	7,80	8,00	91,0	53	39,00
SP0079-0395 VHM/TIALN	7,90	8,00	91,0	53	39,50
SP0080-0400 VHM/TIALN	8,00	8,00	91,0	53	40,00
SP0081-0405 VHM/TIALN	8,10	10,00	103,0	61	40,50
SP0082-0410 VHM/TIALN	8,20	10,00	103,0	61	41,00
SP0083-0415 VHM/TIALN	8,30	10,00	103,0	61	41,50
SP0084-0420 VHM/TIALN	8,40	10,00	103,0	61	42,00
SP0085-0425 VHM/TIALN	8,50	10,00	103,0	61	42,50
SP0086-0430 VHM/TIALN	8,60	10,00	103,0	61	43,00
SP0087-0435 VHM/TIALN	8,70	10,00	103,0	61	43,50
SP0088-0440 VHM/TIALN	8,80	10,00	103,0	61	44,00
SP0089-0445 VHM/TIALN	8,90	10,00	103,0	61	44,50
SP0090-0450 VHM/TIALN	9,00	10,00	103,0	61	45,00
SP0091-0455 VHM/TIALN	9,10	10,00	103,0	61	45,50
SP0092-0460 VHM/TIALN	9,20	10,00	103,0	61	46,00
SP0093-0465 VHM/TIALN	9,30	10,00	103,0	61	46,50
SP0094-0470 VHM/TIALN	9,40	10,00	103,0	61	47,00
SP0095-0475 VHM/TIALN	9,50	10,00	103,0	61	47,50
SP0096-0480 VHM/TIALN	9,60	10,00	103,0	61	48,00
SP0097-0485 VHM/TIALN	9,70	10,00	103,0	61	48,50
SP0098-0490 VHM/TIALN	9,80	10,00	103,0	61	49,00
SP0099-0495 VHM/TIALN	9,90	10,00	103,0	61	49,50
SP0100-0500 VHM/TIALN	10,00	10,00	103,0	61	50,00
SP0101-0505 VHM/TIALN	10,10	12,00	118,0	71	50,50
SP0102-0510 VHM/TIALN	10,20	12,00	118,0	71	51,00
SP0103-0515 VHM/TIALN	10,30	12,00	118,0	71	51,50
SP0104-0520 VHM/TIALN	10,40	12,00	118,0	71	52,00
SP0105-0525 VHM/TIALN	10,50	12,00	118,0	71	52,50
SP0106-0530 VHM/TIALN	10,60	12,00	118,0	71	53,00
SP0107-0535 VHM/TIALN	10,70	12,00	118,0	71	53,50
SP0108-0540 VHM/TIALN	10,80	12,00	118,0	71	54,00
SP0109-0545 VHM/TIALN	10,90	12,00	118,0	71	54,50

Solid carbide drills

Mid-length design, without through tool coolant

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0110-0550 VHM/TIALN	11,00	12,00	118,0	71	55,00
SP0111-0555 VHM/TIALN	11,10	12,00	118,0	71	55,50
SP0112-0560 VHM/TIALN	11,20	12,00	118,0	71	56,00
SP0113-0565 VHM/TIALN	11,30	12,00	118,0	71	56,50
SP0114-0570 VHM/TIALN	11,40	12,00	118,0	71	57,00
SP0115-0575 VHM/TIALN	11,50	12,00	118,0	71	57,50
SP0116-0580 VHM/TIALN	11,60	12,00	118,0	71	58,00
SP0117-0585 VHM/TIALN	11,70	12,00	118,0	71	58,50
SP0118-0590 VHM/TIALN	11,80	12,00	118,0	71	59,00
SP0119-0595 VHM/TIALN	11,90	12,00	118,0	71	59,50
SP0120-0600 VHM/TIALN	12,00	12,00	118,0	71	60,00
SP0123-0615 VHM/TIALN	12,30	14,00	124,0	77	61,50
SP0125-0625 VHM/TIALN	12,50	14,00	124,0	77	62,50
SP0128-0640 VHM/TIALN	12,80	14,00	124,0	77	64,00
SP0130-0650 VHM/TIALN	13,00	14,00	124,0	77	65,00
SP0135-0675 VHM/TIALN	13,50	14,00	124,0	77	67,50
SP0138-0690 VHM/TIALN	13,80	14,00	124,0	77	69,00
SP0140-0700 VHM/TIALN	14,00	14,00	124,0	77	70,00
SP0145-0725 VHM/TIALN	14,50	16,00	133,0	83	72,50
SP0148-0740 VHM/TIALN	14,80	16,00	133,0	83	74,00
SP0150-0750 VHM/TIALN	15,00	16,00	133,0	83	75,00
SP0155-0775 VHM/TIALN	15,50	16,00	133,0	83	77,50
SP0158-0790 VHM/TIALN	15,80	16,00	133,0	83	79,00
SP0160-0800 VHM/TIALN	16,00	16,00	133,0	83	80,00
SP0165-0825 VHM/TIALN	16,50	18,00	143,0	93	82,50
SP0168-0840 VHM/TIALN	16,80	18,00	143,0	93	84,00
SP0170-0850 VHM/TIALN	17,00	18,00	143,0	93	85,00
SP0175-0875 VHM/TIALN	17,50	18,00	143,0	93	87,50
SP0178-0890 VHM/TIALN	17,80	18,00	143,0	93	89,00
SP0180-0900 VHM/TIALN	18,00	18,00	143,0	93	90,00
SP0185-0925 VHM/TIALN	18,50	20,00	153,0	101	92,50
SP0190-0950 VHM/TIALN	19,00	20,00	153,0	101	95,00
SP0195-0975 VHM/TIALN	19,50	20,00	153,0	101	97,50
SP0198-0990 VHM/TIALN	19,80	20,00	153,0	101	99,00
SP0200-1000 VHM/TIALN	20,00	20,00	153,0	101	100,00

Vollhartmetall-Spiralbohrer

Mittellange Ausführung, mit Innenkühlung



N NEU/NEW

Solid carbide drills

Mid-length design, with through tool coolant

1,0-20,0 mm

mit IK
with ic

Seite
Page
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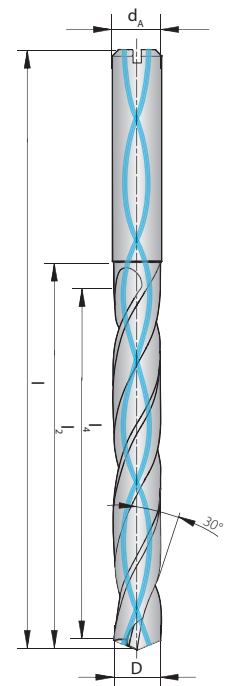
TiAlN

Feinstkorn
Ultra micro
granulation

5
xD

Ausführung 5 x D / Execution 5 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0010-0050 VHM/TIALN	1,00	3,00	55,0	8	5,00
SPC0011-0055 VHM/TIALN	1,10	3,00	55,0	12	5,50
SPC0012-0060 VHM/TIALN	1,20	3,00	55,0	12	6,00
SPC0013-0065 VHM/TIALN	1,30	3,00	55,0	12	6,50
SPC0014-0070 VHM/TIALN	1,40	3,00	55,0	12	7,00
SPC0015-0075 VHM/TIALN	1,50	3,00	55,0	16	7,50
SPC0016-0080 VHM/TIALN	1,60	3,00	55,0	16	8,00
SPC0017-0085 VHM/TIALN	1,70	3,00	55,0	16	8,50
SPC0018-0090 VHM/TIALN	1,80	3,00	55,0	16	9,00
SPC0019-0095 VHM/TIALN	1,90	3,00	55,0	16	9,50
SPC0020-0100 VHM/TIALN	2,00	4,00	57,0	21	10,00
SPC0021-0105 VHM/TIALN	2,10	4,00	57,0	21	10,50
SPC0022-0110 VHM/TIALN	2,20	4,00	57,0	21	11,00
SPC0023-0115 VHM/TIALN	2,30	4,00	57,0	21	11,50
SPC0024-0120 VHM/TIALN	2,40	4,00	57,0	21	12,00
SPC0025-0125 VHM/TIALN	2,50	4,00	57,0	21	12,50
SPC0026-0130 VHM/TIALN	2,60	4,00	57,0	21	13,00
SPC0027-0135 VHM/TIALN	2,70	4,00	57,0	21	13,50
SPC0028-0140 VHM/TIALN	2,80	4,00	57,0	21	14,00
SPC0029-0145 VHM/TIALN	2,90	4,00	57,0	21	14,50
SPC0030-0150 VHM/TIALN	3,00	6,00	66,0	28	15,00
SPC0031-0155 VHM/TIALN	3,10	6,00	66,0	28	15,50
SPC0032-0160 VHM/TIALN	3,20	6,00	66,0	28	16,00
SPC0033-0165 VHM/TIALN	3,30	6,00	66,0	28	16,50
SPC0034-0170 VHM/TIALN	3,40	6,00	66,0	28	17,00
SPC0035-0175 VHM/TIALN	3,50	6,00	66,0	28	17,50
SPC0036-0180 VHM/TIALN	3,60	6,00	66,0	28	18,00
SPC0037-0185 VHM/TIALN	3,70	6,00	66,0	28	18,50
SPC0038-0190 VHM/TIALN	3,80	6,00	74,0	36	19,00
SPC0039-0195 VHM/TIALN	3,90	6,00	74,0	36	19,50
SPC0040-0200 VHM/TIALN	4,00	6,00	74,0	36	20,00
SPC0041-0205 VHM/TIALN	4,10	6,00	74,0	36	20,50
SPC0042-0210 VHM/TIALN	4,20	6,00	74,0	36	21,00
SPC0043-0215 VHM/TIALN	4,30	6,00	74,0	36	21,50
SPC0044-0220 VHM/TIALN	4,40	6,00	74,0	36	22,00
SPC0045-0225 VHM/TIALN	4,50	6,00	74,0	36	22,50
SPC0046-0230 VHM/TIALN	4,60	6,00	74,0	36	23,00
SPC00465-0233 VHM/TIALN	4,65	6,00	74,0	36	23,30
SPC0047-0235 VHM/TIALN	4,70	6,00	74,0	36	23,50
SPC0048-0240 VHM/TIALN	4,80	6,00	82,0	44	24,00
SPC0049-0245 VHM/TIALN	4,90	6,00	82,0	44	24,50
SPC0050-0250 VHM/TIALN	5,00	6,00	82,0	44	25,00



Vollhartmetall-Spiralbohrer

Mittellange Ausführung, mit Innenkühlung

Ausführung 5 x D / Execution 5 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0051-0255 VHM/TIALN	5,10	6,00	82,0	44	25,50
SPC0052-0260 VHM/TIALN	5,20	6,00	82,0	44	26,00
SPC0053-0265 VHM/TIALN	5,30	6,00	82,0	44	26,50
SPC0054-0270 VHM/TIALN	5,40	6,00	82,0	44	27,00
SPC00555-0278 VHM/TIALN	5,50	6,00	82,0	44	27,50
SPC0055-0278 VHM/TIALN	5,55	6,00	82,0	44	27,80
SPC0056-0280 VHM/TIALN	5,60	6,00	82,0	44	28,00
SPC0057-0285 VHM/TIALN	5,70	6,00	82,0	44	28,50
SPC0058-0290 VHM/TIALN	5,80	6,00	82,0	44	29,00
SPC0059-0295 VHM/TIALN	5,90	6,00	82,0	44	29,50
SPC0060-0300 VHM/TIALN	6,00	6,00	82,0	44	30,00
SPC0061-0305 VHM/TIALN	6,10	8,00	91,0	53	30,50
SPC0062-0310 VHM/TIALN	6,20	8,00	91,0	53	31,00
SPC0063-0315 VHM/TIALN	6,30	8,00	91,0	53	31,50
SPC0064-0320 VHM/TIALN	6,40	8,00	91,0	53	32,00
SPC0065-0325 VHM/TIALN	6,50	8,00	91,0	53	32,50
SPC0066-0330 VHM/TIALN	6,60	8,00	91,0	53	33,00
SPC0067-0335 VHM/TIALN	6,70	8,00	91,0	53	33,50
SPC0068-0340 VHM/TIALN	6,80	8,00	91,0	53	34,00
SPC0069-0345 VHM/TIALN	6,90	8,00	91,0	53	34,50
SPC0070-0350 VHM/TIALN	7,00	8,00	91,0	53	35,00
SPC0071-0355 VHM/TIALN	7,10	8,00	91,0	53	35,50
SPC0072-0360 VHM/TIALN	7,20	8,00	91,0	53	36,00
SPC0073-0365 VHM/TIALN	7,30	8,00	91,0	53	36,50
SPC0074-0370 VHM/TIALN	7,40	8,00	91,0	53	37,00
SPC0075-0375 VHM/TIALN	7,50	8,00	91,0	53	37,50
SPC0076-0380 VHM/TIALN	7,60	8,00	91,0	53	38,00
SPC0077-0385 VHM/TIALN	7,70	8,00	91,0	53	38,50
SPC0078-0390 VHM/TIALN	7,80	8,00	91,0	53	39,00
SPC0079-0395 VHM/TIALN	7,90	8,00	91,0	53	39,50
SPC0080-0400 VHM/TIALN	8,00	8,00	91,0	53	40,00
SPC0081-0405 VHM/TIALN	8,10	10,00	103,0	61	40,50
SPC0082-0410 VHM/TIALN	8,20	10,00	103,0	61	41,00
SPC0083-0415 VHM/TIALN	8,30	10,00	103,0	61	41,50
SPC0084-0420 VHM/TIALN	8,40	10,00	103,0	61	42,00
SPC0085-0425 VHM/TIALN	8,50	10,00	103,0	61	42,50
SPC0086-0430 VHM/TIALN	8,60	10,00	103,0	61	43,00
SPC0087-0435 VHM/TIALN	8,70	10,00	103,0	61	43,50
SPC0088-0440 VHM/TIALN	8,80	10,00	103,0	61	44,00
SPC0089-0445 VHM/TIALN	8,90	10,00	103,0	61	44,50
SPC0090-0450 VHM/TIALN	9,00	10,00	103,0	61	45,00
SPC0091-0455 VHM/TIALN	9,10	10,00	103,0	61	45,50
SPC0092-0460 VHM/TIALN	9,20	10,00	103,0	61	46,00
SPC0093-0465 VHM/TIALN	9,30	10,00	103,0	61	46,50
SPC0094-0470 VHM/TIALN	9,40	10,00	103,0	61	47,00
SPC0095-0475 VHM/TIALN	9,50	10,00	103,0	61	47,50
SPC0096-0480 VHM/TIALN	9,60	10,00	103,0	61	48,00
SPC0097-0485 VHM/TIALN	9,70	10,00	103,0	61	48,50
SPC0098-0490 VHM/TIALN	9,80	10,00	103,0	61	49,00
SPC0099-0495 VHM/TIALN	9,90	10,00	103,0	61	49,50
SPC0100-0500 VHM/TIALN	10,00	10,00	103,0	61	50,00
SPC0101-0505 VHM/TIALN	10,10	12,00	118,0	71	50,50
SPC0102-0510 VHM/TIALN	10,20	12,00	118,0	71	51,00
SPC0103-0515 VHM/TIALN	10,30	12,00	118,0	71	51,50
SPC0104-0520 VHM/TIALN	10,40	12,00	118,0	71	52,00
SPC0105-0525 VHM/TIALN	10,50	12,00	118,0	71	52,50
SPC0106-0530 VHM/TIALN	10,60	12,00	118,0	71	53,00
SPC0107-0535 VHM/TIALN	10,70	12,00	118,0	71	53,50

Solid carbide drills

Mid-length design, with through tool coolant

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0108-0540 VHM/TIALN	10,80	12,00	118,0	71	54,00
SPC0109-0545 VHM/TIALN	10,90	12,00	118,0	71	54,50
SPC0110-0550 VHM/TIALN	11,00	12,00	118,0	71	55,00
SPC0111-0555 VHM/TIALN	11,10	12,00	118,0	71	55,50
SPC0112-0560 VHM/TIALN	11,20	12,00	118,0	71	56,00
SPC0113-0565 VHM/TIALN	11,30	12,00	118,0	71	56,50
SPC0114-0570 VHM/TIALN	11,40	12,00	118,0	71	57,00
SPC0115-0575 VHM/TIALN	11,50	12,00	118,0	71	57,50
SPC0116-0580 VHM/TIALN	11,60	12,00	118,0	71	58,00
SPC0117-0585 VHM/TIALN	11,70	12,00	118,0	71	58,50
SPC0118-0590 VHM/TIALN	11,80	12,00	118,0	71	59,00
SPC0119-0595 VHM/TIALN	11,90	12,00	118,0	71	59,50
SPC0120-0600 VHM/TIALN	12,00	12,00	118,0	71	60,00
SPC0125-0625 VHM/TIALN	12,50	14,00	124,0	77	62,50
SPC0127-0635 VHM/TIALN	12,70	14,00	124,0	77	63,50
SPC0128-0640 VHM/TIALN	12,80	14,00	124,0	77	64,00
SPC0130-0650 VHM/TIALN	13,00	14,00	124,0	77	65,00
SPC0132-0660 VHM/TIALN	13,20	14,00	124,0	77	66,00
SPC0135-0675 VHM/TIALN	13,50	14,00	124,0	77	67,50
SPC0140-0700 VHM/TIALN	14,00	14,00	124,0	77	70,00
SPC0142-0710 VHM/TIALN	14,20	16,00	133,0	83	71,00
SPC0145-0725 VHM/TIALN	14,50	16,00	133,0	83	72,50
SPC0150-0750 VHM/TIALN	15,00	16,00	133,0	83	75,00
SPC0155-0775 VHM/TIALN	15,50	16,00	133,0	83	77,50
SPC0160-0800 VHM/TIALN	16,00	16,00	133,0	83	80,00
SPC0165-0825 VHM/TIALN	16,50	18,00	143,0	93	82,50
SPC0170-0850 VHM/TIALN	17,00	18,00	143,0	93	85,00
SPC0175-0875 VHM/TIALN	17,50	18,00	143,0	93	87,50
SPC0180-0900 VHM/TIALN	18,00	18,00	143,0	93	90,00
SPC0185-0925 VHM/TIALN	18,50	20,00	153,0	101	92,50
SPC0188-0940 VHM/TIALN	18,80	20,00	153,0	101	94,00
SPC0190-0950 VHM/TIALN	19,00	20,00	153,0	101	95,00
SPC0195-0975 VHM/TIALN	19,50	20,00	153,0	101	97,50
SPC0200-1000 VHM/TIALN	20,00	20,00	153,0	101	100,00

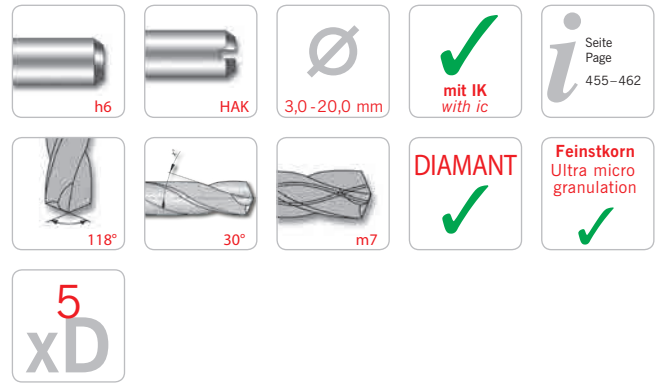
Vollhartmetall-Spiralbohrer

Mittellange Ausführung, mit Innenkühlung, Diamant beschichtet



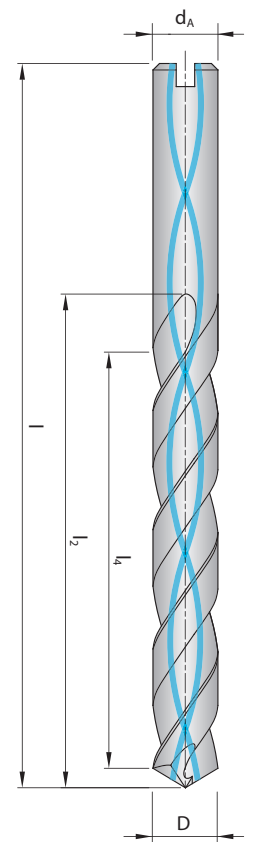
Solid carbide drills

Mid-length design, with through tool coolant, diamond coated



Ausführung 5 x D für Aluminium / Execution 5 x D for aluminium

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0030-0150-ALU VHM/DLC	3,00	6,00	66,0	28	15,00
SPC0031-0155-ALU VHM/DLC	3,10	6,00	66,0	28	15,50
SPC0032-0160-ALU VHM/DLC	3,20	6,00	66,0	28	16,00
SPC0033-0165-ALU VHM/DLC	3,30	6,00	66,0	28	16,50
SPC0034-0170-ALU VHM/DLC	3,40	6,00	66,0	28	17,00
SPC0035-0175-ALU VHM/DLC	3,50	6,00	66,0	28	17,50
SPC0036-0180-ALU VHM/DLC	3,60	6,00	66,0	28	18,00
SPC0037-0185-ALU VHM/DLC	3,70	6,00	66,0	28	18,50
SPC0038-0190-ALU VHM/DLC	3,80	6,00	74,0	36	19,00
SPC0039-0195-ALU VHM/DLC	3,90	6,00	74,0	36	19,50
SPC0040-0200-ALU VHM/DLC	4,00	6,00	74,0	36	20,00
SPC0041-0205-ALU VHM/DLC	4,10	6,00	74,0	36	20,50
SPC0042-0210-ALU VHM/DLC	4,20	6,00	74,0	36	21,00
SPC0043-0215-ALU VHM/DLC	4,30	6,00	74,0	36	21,50
SPC0044-0220-ALU VHM/DLC	4,40	6,00	74,0	36	22,00
SPC0045-0225-ALU VHM/DLC	4,50	6,00	74,0	36	22,50
SPC0046-0230-ALU VHM/DLC	4,60	6,00	74,0	36	23,00
SPC0047-0235-ALU VHM/DLC	4,70	6,00	74,0	36	23,50
SPC0048-0240-ALU VHM/DLC	4,80	6,00	82,0	44	24,00
SPC0049-0245-ALU VHM/DLC	4,90	6,00	82,0	44	24,50
SPC0050-0250-ALU VHM/DLC	5,00	6,00	82,0	44	25,00
SPC0051-0255-ALU VHM/DLC	5,10	6,00	82,0	44	25,50
SPC0052-0260-ALU VHM/DLC	5,20	6,00	82,0	44	26,00
SPC0053-0265-ALU VHM/DLC	5,30	6,00	82,0	44	26,50
SPC0054-0270-ALU VHM/DLC	5,40	6,00	82,0	44	27,00
SPC0055-0275-ALU VHM/DLC	5,50	6,00	82,0	44	27,50
SPC0056-0280-ALU VHM/DLC	5,60	6,00	82,0	44	28,00
SPC0057-0285-ALU VHM/DLC	5,70	6,00	82,0	44	28,50
SPC0058-0290-ALU VHM/DLC	5,80	6,00	82,0	44	29,00
SPC0059-0295-ALU VHM/DLC	5,90	6,00	82,0	44	29,50
SPC0060-0300-ALU VHM/DLC	6,00	6,00	82,0	44	30,00
SPC0061-0305-ALU VHM/DLC	6,10	8,00	91,0	53	30,50
SPC0062-0310-ALU VHM/DLC	6,20	8,00	91,0	53	31,00
SPC0063-0315-ALU VHM/DLC	6,30	8,00	91,0	53	31,50
SPC0064-0320-ALU VHM/DLC	6,40	8,00	91,0	53	32,00
SPC0065-0325-ALU VHM/DLC	6,50	8,00	91,0	53	32,50
SPC0066-0330-ALU VHM/DLC	6,60	8,00	91,0	53	33,00
SPC0067-0335-ALU VHM/DLC	6,70	8,00	91,0	53	33,50
SPC0068-0340-ALU VHM/DLC	6,80	8,00	91,0	53	34,00
SPC0069-0345-ALU VHM/DLC	6,90	8,00	91,0	53	34,50
SPC0070-0350-ALU VHM/DLC	7,00	8,00	91,0	53	35,00
SPC0071-0355-ALU VHM/DLC	7,10	8,00	91,0	53	35,50



Vollhartmetall-Spiralbohrer

Mittellange Ausführung, mit Innenkühlung, Diamant beschichtet

Solid carbide drills

Mid-length design, with through tool coolant, diamond coated

Ausführung 5 x D für Aluminium / Execution 5 x D for aluminium

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0072-0360-ALU VHM/DLC	7,20	8,00	91,0	53	36,00
SPC0073-0365-ALU VHM/DLC	7,30	8,00	91,0	53	36,50
SPC0074-0370-ALU VHM/DLC	7,40	8,00	91,0	53	37,00
SPC0075-0375-ALU VHM/DLC	7,50	8,00	91,0	53	37,50
SPC0076-0380-ALU VHM/DLC	7,60	8,00	91,0	53	38,00
SPC0077-0385-ALU VHM/DLC	7,70	8,00	91,0	53	38,50
SPC0078-0390-ALU VHM/DLC	7,80	8,00	91,0	53	39,00
SPC0079-0395-ALU VHM/DLC	7,90	8,00	91,0	53	39,50
SPC0080-0400-ALU VHM/DLC	8,00	8,00	91,0	53	40,00
SPC0081-0405-ALU VHM/DLC	8,10	10,00	103,0	61	40,50
SPC0082-0410-ALU VHM/DLC	8,20	10,00	103,0	61	41,00
SPC0083-0415-ALU VHM/DLC	8,30	10,00	103,0	61	41,50
SPC0084-0420-ALU VHM/DLC	8,40	10,00	103,0	61	42,00
SPC0085-0425-ALU VHM/DLC	8,50	10,00	103,0	61	42,50
SPC0086-0430-ALU VHM/DLC	8,60	10,00	103,0	61	43,00
SPC0087-0435-ALU VHM/DLC	8,70	10,00	103,0	61	43,50
SPC0088-0440-ALU VHM/DLC	8,80	10,00	103,0	61	44,00
SPC0089-0445-ALU VHM/DLC	8,90	10,00	103,0	61	44,50
SPC0090-0450-ALU VHM/DLC	9,00	10,00	103,0	61	45,00
SPC0091-0455-ALU VHM/DLC	9,10	10,00	103,0	61	45,50
SPC0092-0460-ALU VHM/DLC	9,20	10,00	103,0	61	46,00
SPC0093-0465-ALU VHM/DLC	9,30	10,00	103,0	61	46,50
SPC0094-0470-ALU VHM/DLC	9,40	10,00	103,0	61	47,00
SPC0095-0475-ALU VHM/DLC	9,50	10,00	103,0	61	47,50
SPC0096-0480-ALU VHM/DLC	9,60	10,00	103,0	61	48,00
SPC0097-0485-ALU VHM/DLC	9,70	10,00	103,0	61	48,50
SPC0098-0490-ALU VHM/DLC	9,80	10,00	103,0	61	49,00
SPC0099-0495-ALU VHM/DLC	9,90	10,00	103,0	61	49,50
SPC0100-0500-ALU VHM/DLC	10,00	10,00	103,0	61	50,00
SPC0101-0505-ALU VHM/DLC	10,10	12,00	118,0	71	50,50
SPC0102-0510-ALU VHM/DLC	10,20	12,00	118,0	71	51,00
SPC0103-0515-ALU VHM/DLC	10,30	12,00	118,0	71	51,50
SPC0104-0520-ALU VHM/DLC	10,40	12,00	118,0	71	52,00
SPC0105-0525-ALU VHM/DLC	10,50	12,00	118,0	71	52,50
SPC0106-0530-ALU VHM/DLC	10,60	12,00	118,0	71	53,00
SPC0107-0535-ALU VHM/DLC	10,70	12,00	118,0	71	53,50
SPC0108-0540-ALU VHM/DLC	10,80	12,00	118,0	71	54,00
SPC0109-0545-ALU VHM/DLC	10,90	12,00	118,0	71	54,50
SPC0110-0550-ALU VHM/DLC	11,00	12,00	118,0	71	55,00
SPC0111-0555-ALU VHM/DLC	11,10	12,00	118,0	71	55,50
SPC0112-0560-ALU VHM/DLC	11,20	12,00	118,0	71	56,00
SPC0113-0565-ALU VHM/DLC	11,30	12,00	118,0	71	56,50
SPC0114-0570-ALU VHM/DLC	11,40	12,00	118,0	71	57,00
SPC0115-0575-ALU VHM/DLC	11,50	12,00	118,0	71	57,50
SPC0116-0580-ALU VHM/DLC	11,60	12,00	118,0	71	58,00
SPC0117-0585-ALU VHM/DLC	11,70	12,00	118,0	71	58,50
SPC0118-0590-ALU VHM/DLC	11,80	12,00	118,0	71	59,00
SPC0119-0595-ALU VHM/DLC	11,90	12,00	118,0	71	59,50
SPC0120-0600-ALU VHM/DLC	12,00	12,00	118,0	71	60,00
SPC0123-0615-ALU VHM/DLC	12,30	14,00	124,0	77	61,50
SPC0125-0625-ALU VHM/DLC	12,50	14,00	124,0	77	62,50
SPC0128-0640-ALU VHM/DLC	12,80	14,00	124,0	77	64,00
SPC0130-0650-ALU VHM/DLC	13,00	14,00	124,0	77	65,00
SPC0135-0675-ALU VHM/DLC	13,50	14,00	124,0	77	67,50
SPC0138-0690-ALU VHM/DLC	13,80	14,00	124,0	77	69,00
SPC0140-0700-ALU VHM/DLC	14,00	14,00	124,0	77	70,00
SPC0145-0725-ALU VHM/DLC	14,50	16,00	133,0	83	72,50
SPC0148-0740-ALU VHM/DLC	14,80	16,00	133,0	83	74,00

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0150-0750-ALU VHM/DLC	15,00	16,00	133,0	83	75,00
SPC0155-0775-ALU VHM/DLC	15,50	16,00	133,0	83	77,50
SPC0158-0790-ALU VHM/DLC	15,80	16,00	133,0	83	79,00
SPC0160-0800-ALU VHM/DLC	16,00	16,00	133,0	83	80,00
SPC0165-0825-ALU VHM/DLC	16,50	18,00	143,0	93	82,50
SPC0168-0840-ALU VHM/DLC	16,80	18,00	143,0	93	84,00
SPC0170-0850-ALU VHM/DLC	17,00	18,00	143,0	93	85,00
SPC0175-0875-ALU VHM/DLC	17,50	18,00	143,0	93	87,50
SPC0178-0890-ALU VHM/DLC	17,80	18,00	143,0	93	89,00
SPC0180-0900-ALU VHM/DLC	18,00	18,00	143,0	93	90,00
SPC0185-0925-ALU VHM/DLC	18,50	20,00	153,0	101	92,50
SPC0190-0950-ALU VHM/DLC	19,00	20,00	153,0	101	95,00
SPC0195-0975-ALU VHM/DLC	19,50	20,00	153,0	101	97,50
SPC0198-0990-ALU VHM/DLC	19,80	20,00	153,0	101	99,00
SPC0200-1000-ALU VHM/DLC	20,00	20,00	153,0	101	100,00













Vollhartmetall-Spiralbohrer

Mittellange Ausführung, mit Innenkühlung



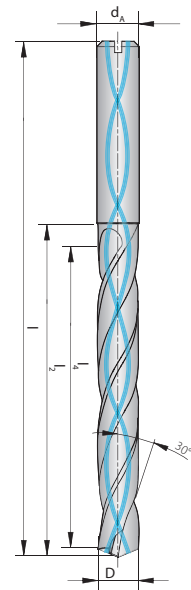
Solid carbide drills

Mid-length design, with through tool coolant

 h6	 HAK	 1,5-20,0 mm	 mit IK with ic	 Seite Page 455-462
 140°	 30°	 m7	 TiAlN	 Feinstkorn Ultra micro granulation
 VA	 5 xD			

Ausführung 5 x D für rostfreie Stähle / Execution 5 x D for stainless steel

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0015-0075-VA VHM/TIALN	1,50	3,00	55,0	16	7,50
SPC0016-0080-VA VHM/TIALN	1,60	3,00	55,0	16	8,00
SPC0017-0085-VA VHM/TIALN	1,70	3,00	55,0	16	8,50
SPC0018-0090-VA VHM/TIALN	1,80	3,00	55,0	16	9,00
SPC0019-0095-VA VHM/TIALN	1,90	3,00	55,0	16	9,50
SPC0020-0100-VA VHM/TIALN	2,00	4,00	57,0	21	10,00
SPC0021-0105-VA VHM/TIALN	2,10	4,00	57,0	21	10,50
SPC0022-0110-VA VHM/TIALN	2,20	4,00	57,0	21	11,00
SPC0023-0115-VA VHM/TIALN	2,30	4,00	57,0	21	11,50
SPC0024-0120-VA VHM/TIALN	2,40	4,00	57,0	21	12,00
SPC0025-0125-VA VHM/TIALN	2,50	4,00	57,0	21	12,50
SPC0026-0130-VA VHM/TIALN	2,60	4,00	57,0	21	13,00
SPC0027-0135-VA VHM/TIALN	2,70	4,00	57,0	21	13,50
SPC0028-0140-VA VHM/TIALN	2,80	4,00	57,0	21	14,00
SPC0029-0145-VA VHM/TIALN	2,90	4,00	57,0	21	14,50
SPC0030-0150-VA VHM/TIALN	3,00	6,00	66,0	28	15,00
SPC0031-0155-VA VHM/TIALN	3,10	6,00	66,0	28	15,50
SPC0032-0160-VA VHM/TIALN	3,20	6,00	66,0	28	16,00
SPC0033-0165-VA VHM/TIALN	3,30	6,00	66,0	28	16,50
SPC0034-0170-VA VHM/TIALN	3,40	6,00	66,0	28	17,00
SPC0035-0175-VA VHM/TIALN	3,50	6,00	66,0	28	17,50
SPC0036-0180-VA VHM/TIALN	3,60	6,00	66,0	28	18,00
SPC0037-0185-VA VHM/TIALN	3,70	6,00	66,0	28	18,50
SPC0038-0190-VA VHM/TIALN	3,80	6,00	74,0	36	19,00
SPC0039-0195-VA VHM/TIALN	3,90	6,00	74,0	36	19,50
SPC0040-0200-VA VHM/TIALN	4,00	6,00	74,0	36	20,00
SPC0041-0205-VA VHM/TIALN	4,10	6,00	74,0	36	20,50
SPC0042-0210-VA VHM/TIALN	4,20	6,00	74,0	36	21,00
SPC0043-0215-VA VHM/TIALN	4,30	6,00	74,0	36	21,50
SPC0044-0220-VA VHM/TIALN	4,40	6,00	74,0	36	22,00
SPC0045-0225-VA VHM/TIALN	4,50	6,00	74,0	36	22,50
SPC0046-0230-VA VHM/TIALN	4,60	6,00	74,0	36	23,00
SPC0047-0235-VA VHM/TIALN	4,70	6,00	74,0	36	23,50
SPC0048-0240-VA VHM/TIALN	4,80	6,00	82,0	44	24,00
SPC0049-0245-VA VHM/TIALN	4,90	6,00	82,0	44	24,50
SPC0050-0250-VA VHM/TIALN	5,00	6,00	82,0	44	25,00
SPC0051-0255-VA VHM/TIALN	5,10	6,00	82,0	44	25,50
SPC0052-0260-VA VHM/TIALN	5,20	6,00	82,0	44	26,00
SPC0053-0265-VA VHM/TIALN	5,30	6,00	82,0	44	26,50
SPC0054-0270-VA VHM/TIALN	5,40	6,00	82,0	44	27,00
SPC0055-0275-VA VHM/TIALN	5,50	6,00	82,0	44	27,50
SPC0056-0280-VA VHM/TIALN	5,60	6,00	82,0	44	28,00



Vollhartmetall-Spiralbohrer

Mittellange Ausführung, mit Innenkühlung

Solid carbide drills

Mid-length design, with through tool coolant

Ausführung 5 x D für rostfreie Stähle / Execution 5 x D for stainless steel

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0057-0285-VA VHM/TIALN	5,70	6,00	82,0	44	28,50
SPC0058-0290-VA VHM/TIALN	5,80	6,00	82,0	44	29,00
SPC0059-0295-VA VHM/TIALN	5,90	6,00	82,0	44	29,50
SPC0060-0300-VA VHM/TIALN	6,00	6,00	82,0	44	30,00
SPC0061-0305-VA VHM/TIALN	6,10	8,00	91,0	53	30,50
SPC0062-0310-VA VHM/TIALN	6,20	8,00	91,0	53	31,00
SPC0063-0315-VA VHM/TIALN	6,30	8,00	91,0	53	31,50
SPC0064-0320-VA VHM/TIALN	6,40	8,00	91,0	53	32,00
SPC0065-0325-VA VHM/TIALN	6,50	8,00	91,0	53	32,50
SPC0066-0330-VA VHM/TIALN	6,60	8,00	91,0	53	33,00
SPC0067-0335-VA VHM/TIALN	6,70	8,00	91,0	53	33,50
SPC0068-0340-VA VHM/TIALN	6,80	8,00	91,0	53	34,00
SPC0069-0345-VA VHM/TIALN	6,90	8,00	91,0	53	34,50
SPC0070-0350-VA VHM/TIALN	7,00	8,00	91,0	53	35,00
SPC0071-0355-VA VHM/TIALN	7,10	8,00	91,0	53	35,50
SPC0072-0360-VA VHM/TIALN	7,20	8,00	91,0	53	36,00
SPC0073-0365-VA VHM/TIALN	7,30	8,00	91,0	53	36,50
SPC0074-0370-VA VHM/TIALN	7,40	8,00	91,0	53	37,00
SPC0075-0375-VA VHM/TIALN	7,50	8,00	91,0	53	37,50
SPC00755-0378-VA VHM/TIALN	7,55	8,00	91,0	53	37,80
SPC0076-0380-VA VHM/TIALN	7,60	8,00	91,0	53	38,00
SPC00765-0383-VA VHM/TIALN	7,65	8,00	91,0	53	38,30
SPC0077-0385-VA VHM/TIALN	7,70	8,00	91,0	53	38,50
SPC0078-0390-VA VHM/TIALN	7,80	8,00	91,0	53	39,00
SPC0079-0395-VA VHM/TIALN	7,90	8,00	91,0	53	39,50
SPC0080-0400-VA VHM/TIALN	8,00	8,00	91,0	53	40,00
SPC0081-0405-VA VHM/TIALN	8,10	10,00	103,0	61	40,50
SPC0082-0410-VA VHM/TIALN	8,20	10,00	103,0	61	41,00
SPC0083-0415-VA VHM/TIALN	8,30	10,00	103,0	61	41,50
SPC0084-0420-VA VHM/TIALN	8,40	10,00	103,0	61	42,00
SPC0085-0425-VA VHM/TIALN	8,50	10,00	103,0	61	42,50
SPC0086-0430-VA VHM/TIALN	8,60	10,00	103,0	61	43,00
SPC0087-0435-VA VHM/TIALN	8,70	10,00	103,0	61	43,50
SPC0088-0440-VA VHM/TIALN	8,80	10,00	103,0	61	44,00
SPC0089-0445-VA VHM/TIALN	8,90	10,00	103,0	61	44,50
SPC0090-0450-VA VHM/TIALN	9,00	10,00	103,0	61	45,00
SPC0091-0455-VA VHM/TIALN	9,10	10,00	103,0	61	45,50
SPC0092-0460-VA VHM/TIALN	9,20	10,00	103,0	61	46,00
SPC00925-0463-VA VHM/TIALN	9,25	10,00	103,0	61	46,30
SPC0093-0465-VA VHM/TIALN	9,30	10,00	103,0	61	46,50
SPC0094-0470-VA VHM/TIALN	9,40	10,00	103,0	61	47,00
SPC0095-0475-VA VHM/TIALN	9,50	10,00	103,0	61	47,50
SPC00955-0488-VA VHM/TIALN	9,55	10,00	103,0	61	48,80
SPC0096-0480-VA VHM/TIALN	9,60	10,00	103,0	61	48,00
SPC0097-0485-VA VHM/TIALN	9,70	10,00	103,0	61	48,50
SPC0098-0490-VA VHM/TIALN	9,80	10,00	103,0	61	49,00
SPC0099-0495-VA VHM/TIALN	9,90	10,00	103,0	61	49,50
SPC0100-0500-VA VHM/TIALN	10,00	10,00	103,0	61	50,00
SPC0101-0505-VA VHM/TIALN	10,10	12,00	118,0	71	50,50
SPC0102-0510-VA VHM/TIALN	10,20	12,00	118,0	71	51,00
SPC0103-0515-VA VHM/TIALN	10,30	12,00	118,0	71	51,50
SPC0104-0520-VA VHM/TIALN	10,40	12,00	118,0	71	52,00
SPC0105-0525-VA VHM/TIALN	10,50	12,00	118,0	71	52,50
SPC0106-0530-VA VHM/TIALN	10,60	12,00	118,0	71	53,00
SPC0107-0535-VA VHM/TIALN	10,70	12,00	118,0	71	53,50
SPC0108-0540-VA VHM/TIALN	10,80	12,00	118,0	71	54,00
SPC0109-0545-VA VHM/TIALN	10,90	12,00	118,0	71	54,50
SPC0110-0550-VA VHM/TIALN	11,00	12,00	118,0	71	55,00

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0111-0555-VA VHM/TIALN	11,10	12,00	118,0	71	55,50
SPC0112-0560-VA VHM/TIALN	11,20	12,00	118,0	71	56,00
SPC0113-0565-VA VHM/TIALN	11,30	12,00	118,0	71	56,50
SPC0114-0570-VA VHM/TIALN	11,40	12,00	118,0	71	57,00
SPC0115-0575-VA VHM/TIALN	11,50	12,00	118,0	71	57,50
SPC0116-0580-VA VHM/TIALN	11,60	12,00	118,0	71	58,00
SPC0117-0585-VA VHM/TIALN	11,70	12,00	118,0	71	58,50
SPC0118-0590-VA VHM/TIALN	11,80	12,00	118,0	71	59,00
SPC0119-0595-VA VHM/TIALN	11,90	12,00	118,0	71	59,50
SPC0120-0600-VA VHM/TIALN	12,00	12,00	118,0	71	60,00
SPC0125-0625-VA VHM/TIALN	12,50	14,00	124,0	77	62,50
SPC0128-0640-VA VHM/TIALN	12,80	14,00	124,0	77	64,00
SPC0130-0650-VA VHM/TIALN	13,00	14,00	124,0	77	65,00
SPC0135-0675-VA VHM/TIALN	13,50	14,00	124,0	77	67,50
SPC0140-0700-VA VHM/TIALN	14,00	14,00	124,0	77	70,00
SPC0145-0725-VA VHM/TIALN	14,50	16,00	133,0	83	72,50
SPC0150-0750-VA VHM/TIALN	15,00	16,00	133,0	83	75,00
SPC0155-0775-VA VHM/TIALN	15,50	16,00	133,0	83	77,50
SPC0160-0800-VA VHM/TIALN	16,00	16,00	133,0	83	80,00
SPC0165-0825-VA VHM/TIALN	16,50	18,00	143,0	93	82,50
SPC0170-0850-VA VHM/TIALN	17,00	18,00	143,0	93	85,00
SPC0175-0875-VA VHM/TIALN	17,50	18,00	143,0	93	87,50
SPC0180-0900-VA VHM/TIALN	18,00	18,00	143,0	93	90,00
SPC0185-0925-VA VHM/TIALN	18,50	20,00	153,0	101	92,50
SPC0190-0950-VA VHM/TIALN	19,00	20,00	153,0	101	95,00
SPC0195-0975-VA VHM/TIALN	19,50	20,00	153,0	101	97,50
SPC0200-1000-VA VHM/TIALN	20,00	20,00	153,0	101	100,00

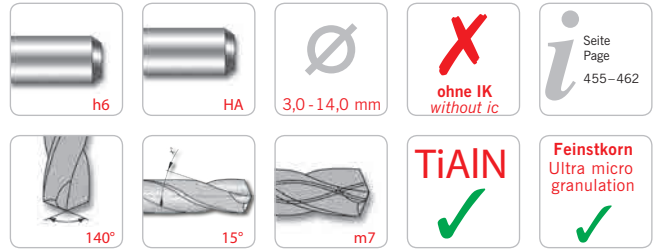
Vollhartmetall-Spiralbohrer

Mittellange Ausführung, ohne Innenkühlung



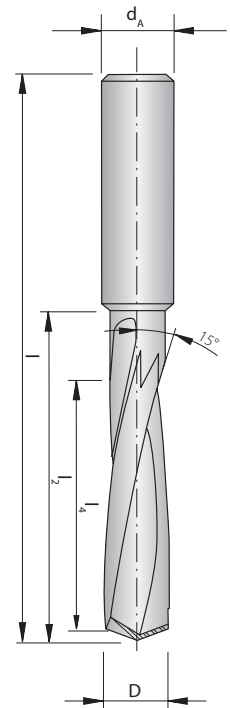
Solid carbide drills

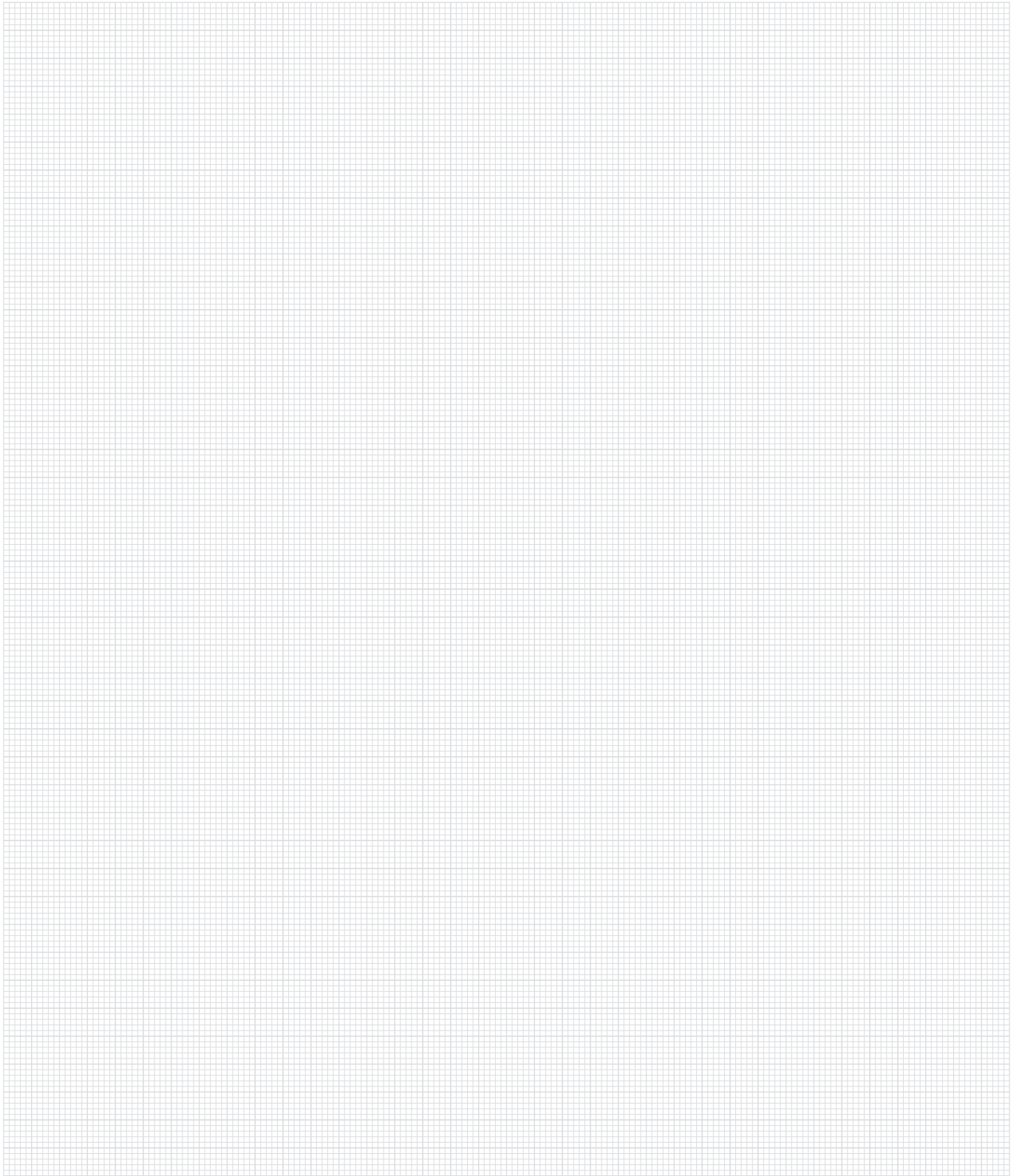
Mid-length design, without through tool coolant



Mittellange Ausführung für gehärtete Stähle / Mid-length execution for hardened steel

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0030-0150-H VHM/TIALN	3,00	3,00	46,0	16	15,00
SP0032-0160-H VHM/TIALN	3,20	4,00	48,0	18	16,00
SP0033-0165-H VHM/TIALN	3,30	4,00	48,0	18	16,50
SP0034-0170-H VHM/TIALN	3,40	4,00	50,0	20	17,00
SP0035-0175-H VHM/TIALN	3,50	4,00	50,0	20	17,50
SP0040-0200-H VHM/TIALN	4,00	4,00	52,0	22	20,00
SP0042-0210-H VHM/TIALN	4,20	6,00	65,0	25	21,00
SP0043-0215-H VHM/TIALN	4,30	6,00	68,0	28	21,50
SP0044-0220-H VHM/TIALN	4,40	6,00	68,0	28	22,00
SP0045-0225-H VHM/TIALN	4,50	6,00	68,0	28	22,50
SP0050-0250-H VHM/TIALN	5,00	6,00	72,0	32	25,00
SP0051-0255-H VHM/TIALN	5,10	6,00	72,0	32	25,50
SP0052-0260-H VHM/TIALN	5,20	6,00	72,0	32	26,00
SP0055-0275-H VHM/TIALN	5,50	6,00	75,0	35	27,50
SP0060-0300-H VHM/TIALN	6,00	6,00	75,0	35	30,00
SP0065-0325-H VHM/TIALN	6,50	8,00	80,0	40	32,50
SP0068-0340-H VHM/TIALN	6,80	8,00	85,0	45	34,00
SP0069-0345-H VHM/TIALN	6,90	8,00	85,0	45	34,50
SP0070-0350-H VHM/TIALN	7,00	8,00	85,0	45	35,00
SP0075-0375-H VHM/TIALN	7,50	8,00	85,0	45	37,50
SP0080-0400-H VHM/TIALN	8,00	8,00	98,0	50	40,00
SP0085-0425-H VHM/TIALN	8,50	10,00	98,0	50	42,50
SP0086-0430-H VHM/TIALN	8,60	10,00	105,0	57	43,00
SP0088-0440-H VHM/TIALN	8,80	10,00	105,0	57	44,00
SP0090-0450-H VHM/TIALN	9,00	10,00	105,0	57	45,00
SP0095-0475-H VHM/TIALN	9,50	10,00	105,0	57	47,50
SP0100-0500-H VHM/TIALN	10,00	10,00	111,0	63	50,00
SP0102-0510-H VHM/TIALN	10,20	12,00	111,0	63	51,00
SP0103-0515-H VHM/TIALN	10,30	12,00	111,0	63	51,50
SP0105-0525-H VHM/TIALN	10,50	12,00	111,0	63	52,50
SP0108-0540-H VHM/TIALN	10,80	12,00	119,0	71	54,00
SP0110-0550-H VHM/TIALN	11,00	12,00	119,0	71	55,00
SP0115-0575-H VHM/TIALN	11,50	12,00	119,0	71	57,50
SP0120-0600-H VHM/TIALN	12,00	12,00	119,0	71	60,00
SP0140-0700-H VHM/TIALN	14,00	14,00	125,0	71	70,00





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Vollhartmetall-Spiralbohrer

Lange Ausführung, ohne Innenkühlung



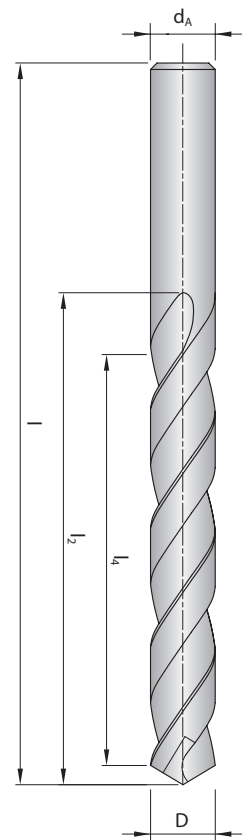
Solid carbide drills

Long design, without through tool coolant



Ausführung 7 x D / Execution 7 x D

Bezeichnung Designation	D h7	d _A h6	l	l ₂	l ₄
SP0010-0070 VHM/FK	1,00	1,00	34,0	12	7,00
SP0011-0077 VHM/FK	1,10	1,10	36,0	14	7,70
SP0012-0084 VHM/FK	1,20	1,20	38,0	16	8,40
SP0013-0091 VHM/FK	1,30	1,30	38,0	16	9,10
SP0014-0098 VHM/FK	1,40	1,40	40,0	18	9,80
SP0015-0105 VHM/FK	1,50	1,50	40,0	18	10,50
SP0016-0112 VHM/FK	1,60	1,60	43,0	20	11,20
SP0017-0119 VHM/FK	1,70	1,70	43,0	20	11,90
SP0018-0126 VHM/FK	1,80	1,80	46,0	22	12,60
SP0019-0133 VHM/FK	1,90	1,90	46,0	22	13,30
SP0020-0140 VHM/FK	2,00	2,00	49,0	24	14,00
SP0021-0147 VHM/FK	2,10	2,10	49,0	24	14,70
SP0022-0154 VHM/FK	2,20	2,20	53,0	27	15,40
SP0023-0161 VHM/FK	2,30	2,30	53,0	27	16,10
SP0024-0168 VHM/FK	2,40	2,40	57,0	30	16,80
SP0025-0175 VHM/FK	2,50	2,50	57,0	30	17,50
SP0026-0182 VHM/FK	2,60	2,60	57,0	30	18,20
SP0027-0189 VHM/FK	2,70	2,70	61,0	33	18,90
SP0028-0196 VHM/FK	2,80	2,80	61,0	33	19,60
SP0029-0203 VHM/FK	2,90	2,90	61,0	33	20,30
SP0030-0210 VHM/FK	3,00	3,00	61,0	33	21,00
SP0031-0217 VHM/FK	3,10	3,10	65,0	36	21,70
SP0032-0224 VHM/FK	3,20	3,20	65,0	36	22,40
SP0033-0231 VHM/FK	3,30	3,30	65,0	36	23,10
SP0034-0238 VHM/FK	3,40	3,40	70,0	39	23,80
SP0035-0245 VHM/FK	3,50	3,50	70,0	39	24,50
SP0036-0252 VHM/FK	3,60	3,60	70,0	39	25,20
SP0037-0259 VHM/FK	3,70	3,70	70,0	39	25,90
SP0038-0266 VHM/FK	3,80	3,80	75,0	43	26,60
SP0039-0273 VHM/FK	3,90	3,90	75,0	43	27,30
SP0040-0280 VHM/FK	4,00	4,00	75,0	43	28,00
SP0041-0287 VHM/FK	4,10	4,10	75,0	43	28,70
SP0042-0294 VHM/FK	4,20	4,20	75,0	43	29,40
SP0043-0301 VHM/FK	4,30	4,30	80,0	47	30,10
SP0044-0308 VHM/FK	4,40	4,40	80,0	47	30,80
SP0045-0315 VHM/FK	4,50	4,50	80,0	47	31,50
SP0046-0322 VHM/FK	4,60	4,60	80,0	47	32,20
SP0047-0329 VHM/FK	4,70	4,70	80,0	47	32,90
SP0048-0336 VHM/FK	4,80	4,80	86,0	52	33,60
SP0049-0343 VHM/FK	4,90	4,90	86,0	52	34,30
SP0050-0350 VHM/FK	5,00	5,00	86,0	52	35,00
SP0051-0357 VHM/FK	5,10	5,10	86,0	52	35,70



Vollhartmetall-Spiralbohrer

Lange Ausführung, ohne Innenkühlung

Solid carbide drills

Long design, without through tool coolant

Ausführung 7 x D / Execution 7 x D

Bezeichnung Designation	D h7	d _A h6	l	l ₂	l ₄
SP0052-0364 VHM/FK	5,20	5,20	86,0	52	36,40
SP0053-0371 VHM/FK	5,30	5,30	86,0	52	37,10
SP0054-0378 VHM/FK	5,40	5,40	93,0	57	37,80
SP0055-0385 VHM/FK	5,50	5,50	93,0	57	38,50
SP0056-0392 VHM/FK	5,60	5,60	93,0	57	39,20
SP0057-0399 VHM/FK	5,70	5,70	93,0	57	39,90
SP0058-0406 VHM/FK	5,80	5,80	93,0	57	40,60
SP0059-0413 VHM/FK	5,90	5,90	93,0	57	41,30
SP0060-0420 VHM/FK	6,00	6,00	93,0	57	42,00
SP0061-0427 VHM/FK	6,10	6,10	101,0	63	42,70
SP0062-0434 VHM/FK	6,20	6,20	101,0	63	43,40
SP0063-0441 VHM/FK	6,30	6,30	101,0	63	44,10
SP0064-0448 VHM/FK	6,40	6,40	101,0	63	44,80
SP0065-0455 VHM/FK	6,50	6,50	101,0	63	45,50
SP0068-0476 VHM/FK	6,80	6,80	109,0	69	47,60
SP0070-0490 VHM/FK	7,00	7,00	109,0	69	49,00
SP0080-0560 VHM/FK	8,00	8,00	117,0	75	56,00
SP0085-0595 VHM/FK	8,50	8,50	117,0	75	59,50
SP0100-0700 VHM/FK	10,00	10,00	133,0	87	70,00

Vollhartmetall-Spiralbohrer

Lange Ausführung, ohne Innenkühlung



N NEU/NEW

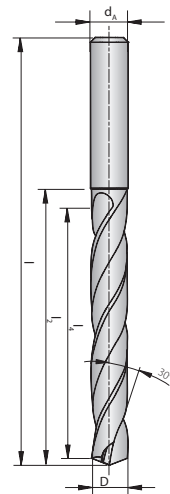
Solid carbide drills

Long design, without through tool coolant

h6	HA	1,0-10,0 mm	ohne IK without ic	Seite Page 455-462
118°	30°	h7	TiAlN	Feinstkorn Ultra micro granulation
7xD				

Ausführung 7 x D / Execution 7 x D

Bezeichnung Designation	D h7	d _A h6	l	l ₂	l ₄
SP0010-0070 VHM/TIALN N	1,00	1,00	34,0	12	7,00
SP0011-0077 VHM/TIALN N	1,10	1,10	36,0	14	7,70
SP0012-0084 VHM/TIALN N	1,20	1,20	38,0	16	8,40
SP0013-0091 VHM/TIALN N	1,30	1,30	38,0	16	9,10
SP0014-0098 VHM/TIALN N	1,40	1,40	40,0	18	9,80
SP0015-0105 VHM/TIALN N	1,50	1,50	40,0	18	10,50
SP0016-0112 VHM/TIALN N	1,60	1,60	43,0	20	11,20
SP0017-0119 VHM/TIALN N	1,70	1,70	43,0	20	11,90
SP0018-0126 VHM/TIALN N	1,80	1,80	46,0	22	12,60
SP0019-0133 VHM/TIALN N	1,90	1,90	46,0	22	13,30
SP0020-0140 VHM/TIALN N	2,00	2,00	49,0	24	14,00
SP0021-0147 VHM/TIALN N	2,10	2,10	49,0	24	14,70
SP0022-0154 VHM/TIALN N	2,20	2,20	53,0	27	15,40
SP0023-0161 VHM/TIALN N	2,30	2,30	53,0	27	16,10
SP0024-0168 VHM/TIALN N	2,40	2,40	57,0	30	16,80
SP0025-0175 VHM/TIALN N	2,50	2,50	57,0	30	17,50
SP0026-0182 VHM/TIALN N	2,60	2,60	57,0	30	18,20
SP0027-0189 VHM/TIALN N	2,70	2,70	61,0	33	18,90
SP0028-0196 VHM/TIALN N	2,80	2,80	61,0	33	19,60
SP0029-0203 VHM/TIALN N	2,90	2,90	61,0	33	20,30
SP0030-0210 VHM/TIALN N	3,00	3,00	61,0	33	21,00
SP0031-0217 VHM/TIALN N	3,10	3,10	65,0	36	21,70
SP0032-0224 VHM/TIALN N	3,20	3,20	65,0	36	22,40
SP0033-0231 VHM/TIALN N	3,30	3,30	65,0	36	23,10
SP0034-0238 VHM/TIALN N	3,40	3,40	70,0	39	23,80
SP0035-0245 VHM/TIALN N	3,50	3,50	70,0	39	24,50
SP0036-0252 VHM/TIALN N	3,60	3,60	70,0	39	25,20
SP0037-0259 VHM/TIALN N	3,70	3,70	70,0	39	25,90
SP0038-0266 VHM/TIALN N	3,80	3,80	75,0	43	26,60
SP0039-0273 VHM/TIALN N	3,90	3,90	75,0	43	27,30
SP0040-0280 VHM/TIALN N	4,00	4,00	75,0	43	28,00
SP0041-0287 VHM/TIALN N	4,10	4,10	75,0	43	28,70
SP0042-0294 VHM/TIALN N	4,20	4,20	75,0	43	29,40
SP0043-0301 VHM/TIALN N	4,30	4,30	80,0	47	30,10
SP0044-0308 VHM/TIALN N	4,40	4,40	80,0	47	30,80
SP0045-0315 VHM/TIALN N	4,50	4,50	80,0	47	31,50
SP0046-0322 VHM/TIALN N	4,60	4,60	80,0	47	32,20
SP0047-0329 VHM/TIALN N	4,70	4,70	80,0	47	32,90
SP0048-0336 VHM/TIALN N	4,80	4,80	86,0	52	33,60
SP0049-0343 VHM/TIALN N	4,90	4,90	86,0	52	34,30
SP0050-0350 VHM/TIALN N	5,00	5,00	86,0	52	35,00
SP0051-0357 VHM/TIALN N	5,10	5,10	86,0	52	35,70






















Vollhartmetall-Spiralbohrer

Lange Ausführung, ohne Innenkühlung

Solid carbide drills

Long design, without through tool coolant

Ausführung 7 x D / Execution 7 x D

Bezeichnung Designation	D h7	d _A h6	l	l ₂	l ₄
SP0052-0364 VHM/TIALN 	5,20	5,20	86,0	52	36,40
SP0053-0371 VHM/TIALN 	5,30	5,30	86,0	52	37,10
SP0054-0378 VHM/TIALN 	5,40	5,40	93,0	57	37,80
SP0055-0385 VHM/TIALN 	5,50	5,50	93,0	57	38,50
SP0056-0392 VHM/TIALN 	5,60	5,60	93,0	57	39,20
SP0057-0399 VHM/TIALN 	5,70	5,70	93,0	57	39,90
SP0058-0406 VHM/TIALN 	5,80	5,80	93,0	57	40,60
SP0059-0413 VHM/TIALN 	5,90	5,90	93,0	57	41,30
SP0060-0420 VHM/TIALN 	6,00	6,00	93,0	57	42,00
SP0061-0427 VHM/TIALN 	6,10	6,10	101,0	63	42,70
SP0062-0434 VHM/TIALN 	6,20	6,20	101,0	63	43,40
SP0063-0441 VHM/TIALN 	6,30	6,30	101,0	63	44,10
SP0064-0448 VHM/TIALN 	6,40	6,40	101,0	63	44,80
SP0065-0455 VHM/TIALN 	6,50	6,50	101,0	63	45,50
SP0068-0476 VHM/TIALN 	6,80	6,80	109,0	69	47,60
SP0070-0490 VHM/TIALN 	7,00	7,00	109,0	69	49,00
SP0080-0560 VHM/TIALN 	8,00	8,00	117,0	75	56,00
SP0085-0595 VHM/TIALN 	8,50	8,50	117,0	75	59,50
SP0100-0700 VHM/TIALN 	10,00	10,00	133,0	87	70,00

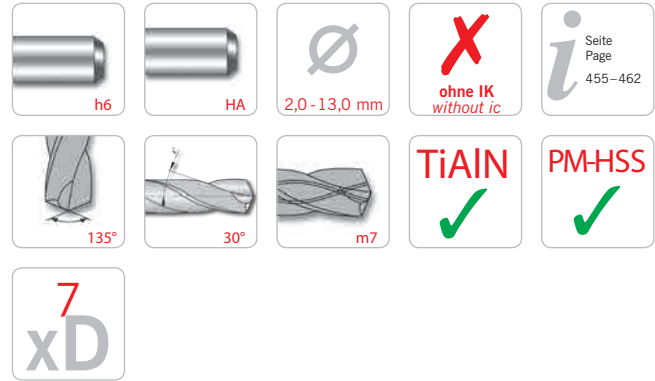
PM-HSS Spiralbohrer

Lange Ausführung, ohne Innenkühlung



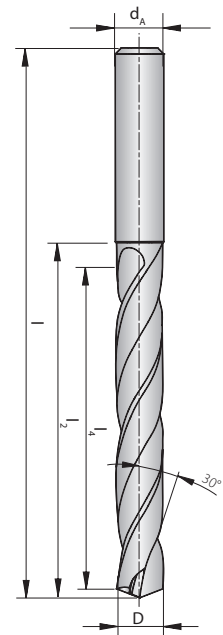
Powder metal drills

Long design, without through tool coolant



Ausführung 7 x D Pulvermetallurgisches HSS / Execution 7 x D powder metal drill

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0020-0140-PM TIALN	2,00	3,00	56,0	24	14,00
SP0021-0147-PM TIALN	2,10	3,00	56,0	24	14,70
SP0022-0154-PM TIALN	2,20	3,00	56,0	25	15,40
SP0023-0161-PM TIALN	2,30	3,00	56,0	25	16,10
SP0024-0168-PM TIALN	2,40	3,00	61,0	30	16,80
SP0025-0175-PM TIALN	2,50	3,00	61,0	30	17,50
SP0026-0182-PM TIALN	2,60	3,00	61,0	30	18,20
SP0027-0189-PM TIALN	2,70	3,00	64,0	33	18,90
SP0028-0196-PM TIALN	2,80	3,00	64,0	33	19,60
SP0029-0203-PM TIALN	2,90	3,00	64,0	33	20,30
SP0030-0210-PM TIALN	3,00	3,00	64,0	33	21,00
SP0031-0217-PM TIALN	3,10	4,00	68,0	36	21,70
SP0032-0224-PM TIALN	3,20	4,00	68,0	36	22,40
SP0033-0231-PM TIALN	3,30	4,00	68,0	36	23,10
SP0034-0238-PM TIALN	3,40	4,00	71,0	39	23,80
SP0035-0245-PM TIALN	3,50	4,00	71,0	39	24,50
SP0036-0252-PM TIALN	3,60	4,00	71,0	39	25,20
SP0037-0259-PM TIALN	3,70	4,00	71,0	39	25,90
SP0038-0266-PM TIALN	3,80	4,00	75,0	43	26,60
SP0039-0273-PM TIALN	3,90	4,00	75,0	43	27,30
SP0040-0280-PM TIALN	4,00	4,00	75,0	43	28,00
SP0041-0287-PM TIALN	4,10	6,00	85,0	43	28,70
SP0042-0294-PM TIALN	4,20	6,00	85,0	43	29,40
SP0043-0301-PM TIALN	4,30	6,00	89,0	47	30,10
SP0044-0308-PM TIALN	4,40	6,00	89,0	47	30,80
SP0045-0315-PM TIALN	4,50	6,00	89,0	47	31,50
SP0046-0322-PM TIALN	4,60	6,00	89,0	47	32,20
SP0047-0329-PM TIALN	4,70	6,00	89,0	47	32,90
SP0048-0336-PM TIALN	4,80	6,00	94,0	52	33,60
SP0049-0343-PM TIALN	4,90	6,00	94,0	52	34,30
SP0050-0350-PM TIALN	5,00	6,00	94,0	52	35,00
SP0051-0357-PM TIALN	5,10	6,00	94,0	52	35,70
SP0052-0364-PM TIALN	5,20	6,00	94,0	52	36,40
SP0053-0371-PM TIALN	5,30	6,00	94,0	52	37,10
SP0054-0378-PM TIALN	5,40	6,00	99,0	57	37,80
SP0055-0385-PM TIALN	5,50	6,00	99,0	57	38,50
SP0056-0392-PM TIALN	5,60	6,00	99,0	57	39,20
SP0057-0399-PM TIALN	5,70	6,00	99,0	57	39,90
SP0058-0406-PM TIALN	5,80	6,00	99,0	57	40,60
SP0059-0413-PM TIALN	5,90	6,00	99,0	57	41,30
SP0060-0420-PM TIALN	6,00	6,00	99,0	57	42,00
SP0061-0427-PM TIALN	6,10	8,00	107,0	63	42,70



PM-HSS Spiralbohrer

Lange Ausführung, ohne Innenkühlung

Powder metal drills

Long design, without through tool coolant

Ausführung 7 x D Pulvermetallurgisches HSS / Execution 7 x D powder metal drill

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0062-0434-PM TIALN	6,20	8,00	107,0	63	43,40
SP0063-0441-PM TIALN	6,30	8,00	107,0	63	44,10
SP0064-0448-PM TIALN	6,40	8,00	107,0	63	44,80
SP0065-0455-PM TIALN	6,50	8,00	107,0	63	45,50
SP0066-0462-PM TIALN	6,60	8,00	107,0	63	46,20
SP0067-0469-PM TIALN	6,70	8,00	107,0	63	46,90
SP0068-0476-PM TIALN	6,80	8,00	113,0	69	47,60
SP0069-0483-PM TIALN	6,90	8,00	113,0	69	48,30
SP0070-0490-PM TIALN	7,00	8,00	113,0	69	49,00
SP0071-0497-PM TIALN	7,10	8,00	113,0	69	49,70
SP0072-0504-PM TIALN	7,20	8,00	113,0	69	50,40
SP0073-0511-PM TIALN	7,30	8,00	113,0	69	51,10
SP0074-0518-PM TIALN	7,40	8,00	113,0	69	51,80
SP0075-0525-PM TIALN	7,50	8,00	113,0	69	52,50
SP0076-0532-PM TIALN	7,60	8,00	119,0	75	53,20
SP0077-0539-PM TIALN	7,70	8,00	119,0	75	53,90
SP0078-0546-PM TIALN	7,80	8,00	119,0	75	54,60
SP0079-0553-PM TIALN	7,90	8,00	119,0	75	55,30
SP0080-0560-PM TIALN	8,00	8,00	119,0	75	56,00
SP0081-0567-PM TIALN	8,10	10,00	125,0	75	56,70
SP0082-0574-PM TIALN	8,20	10,00	125,0	75	57,40
SP0083-0581-PM TIALN	8,30	10,00	125,0	75	58,10
SP0084-0588-PM TIALN	8,40	10,00	125,0	75	58,80
SP0085-0595-PM TIALN	8,50	10,00	125,0	75	59,50
SP0086-0602-PM TIALN	8,60	10,00	131,0	81	60,20
SP0087-0609-PM TIALN	8,70	10,00	131,0	81	60,90
SP0088-0616-PM TIALN	8,80	10,00	131,0	81	61,60
SP0089-0623-PM TIALN	8,90	10,00	131,0	81	62,30
SP0090-0630-PM TIALN	9,00	10,00	131,0	81	63,00
SP0091-0637-PM TIALN	9,10	10,00	131,0	81	63,70
SP0092-0644-PM TIALN	9,20	10,00	131,0	81	64,40
SP0093-0651-PM TIALN	9,30	10,00	131,0	81	65,10
SP0094-0658-PM TIALN	9,40	10,00	131,0	81	65,80
SP0095-0665-PM TIALN	9,50	10,00	131,0	81	66,50
SP0096-0672-PM TIALN	9,60	10,00	137,0	87	67,20
SP0097-0679-PM TIALN	9,70	10,00	137,0	87	67,90
SP0098-0686-PM TIALN	9,80	10,00	137,0	87	68,60
SP0099-0693-PM TIALN	9,90	10,00	137,0	87	69,30
SP0100-0700-PM TIALN	10,00	10,00	137,0	87	70,00
SP0101-0707-PM TIALN	10,10	12,00	144,0	87	70,70
SP0102-0714-PM TIALN	10,20	12,00	144,0	87	71,40
SP0103-0721-PM TIALN	10,30	12,00	144,0	87	72,10
SP0104-0728-PM TIALN	10,40	12,00	144,0	87	72,80
SP0105-0735-PM TIALN	10,50	12,00	144,0	87	73,50
SP0106-0742-PM TIALN	10,60	12,00	144,0	87	74,20
SP0107-0749-PM TIALN	10,70	12,00	151,0	94	74,90
SP0108-0756-PM TIALN	10,80	12,00	151,0	94	75,60
SP0109-0763-PM TIALN	10,90	12,00	151,0	94	76,30
SP0110-0770-PM TIALN	11,00	12,00	151,0	94	77,00
SP0111-0777-PM TIALN	11,10	12,00	151,0	94	77,70
SP0112-0784-PM TIALN	11,20	12,00	151,0	94	78,40
SP0113-0791-PM TIALN	11,30	12,00	151,0	94	79,10
SP0114-0798-PM TIALN	11,40	12,00	151,0	94	79,80
SP0115-0805-PM TIALN	11,50	12,00	151,0	94	80,50
SP0116-0812-PM TIALN	11,60	12,00	151,0	94	81,20
SP0117-0819-PM TIALN	11,70	12,00	151,0	94	81,90
SP0118-0826-PM TIALN	11,80	12,00	151,0	94	82,60
SP0119-0833-PM TIALN	11,90	12,00	158,0	101	83,30

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SP0120-0840-PM TIALN	12,00	12,00	158,0	101	84,00
SP0121-0847-PM TIALN	12,10	12,00	158,0	101	84,70
SP0122-0854-PM TIALN	12,20	12,00	158,0	101	85,40
SP0123-0861-PM TIALN	12,30	12,00	158,0	101	86,10
SP0124-0868-PM TIALN	12,40	12,00	158,0	101	86,80
SP0125-0875-PM TIALN	12,50	12,00	158,0	101	87,50
SP0126-0882-PM TIALN	12,60	12,00	158,0	101	88,20
SP0127-0889-PM TIALN	12,70	12,00	158,0	101	88,90
SP0128-0896-PM TIALN	12,80	12,00	158,0	101	89,60
SP0129-0903-PM TIALN	12,90	12,00	158,0	101	90,30
SP0130-0910-PM TIALN	13,00	12,00	158,0	101	91,00

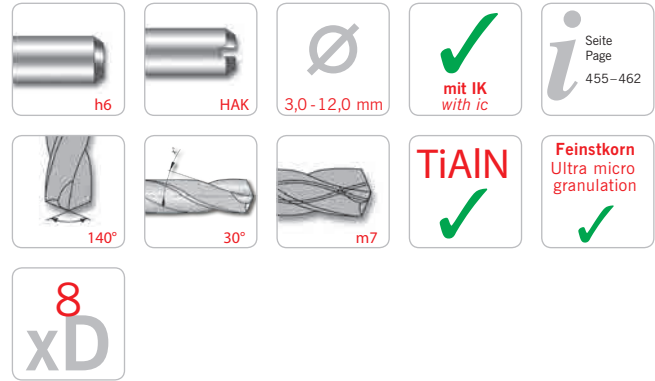
Vollhartmetall-Spiralbohrer

Lange Ausführung, mit Innenkühlung



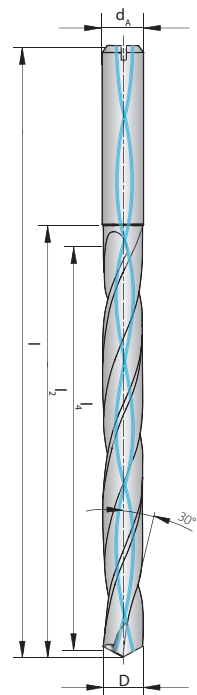
Solid carbide drills

Long design, with through tool coolant



Ausführung 8 x D / Execution 8 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0030-0240 VHM/TIALN	3,00	6,00	72,0	34	24,00
SPC0031-0248 VHM/TIALN	3,10	6,00	72,0	34	24,80
SPC0032-0256 VHM/TIALN	3,20	6,00	72,0	34	25,60
SPC0033-0264 VHM/TIALN	3,30	6,00	72,0	34	26,40
SPC0034-0272 VHM/TIALN	3,40	6,00	72,0	34	27,20
SPC0035-0280 VHM/TIALN	3,50	6,00	72,0	34	28,00
SPC0036-0288 VHM/TIALN	3,60	6,00	72,0	34	28,80
SPC0037-0296 VHM/TIALN	3,70	6,00	72,0	34	29,60
SPC0038-0304 VHM/TIALN	3,80	6,00	81,0	43	30,40
SPC0039-0312 VHM/TIALN	3,90	6,00	81,0	43	31,20
SPC0040-0320 VHM/TIALN	4,00	6,00	81,0	43	32,00
SPC0041-0328 VHM/TIALN	4,10	6,00	81,0	43	32,80
SPC0042-0336 VHM/TIALN	4,20	6,00	81,0	43	33,60
SPC0043-0344 VHM/TIALN	4,30	6,00	81,0	43	34,40
SPC0044-0352 VHM/TIALN	4,40	6,00	81,0	43	35,20
SPC0045-0360 VHM/TIALN	4,50	6,00	81,0	43	36,00
SPC0046-0368 VHM/TIALN	4,60	6,00	81,0	43	36,80
SPC0047-0376 VHM/TIALN	4,70	6,00	81,0	43	37,60
SPC0048-0384 VHM/TIALN	4,80	6,00	95,0	57	38,40
SPC0049-0392 VHM/TIALN	4,90	6,00	95,0	57	39,20
SPC0050-0400 VHM/TIALN	5,00	6,00	95,0	57	40,00
SPC0051-0408 VHM/TIALN	5,10	6,00	95,0	57	40,80
SPC0052-0416 VHM/TIALN	5,20	6,00	95,0	57	41,60
SPC0053-0424 VHM/TIALN	5,30	6,00	95,0	57	42,40
SPC0054-0432 VHM/TIALN	5,40	6,00	95,0	57	43,20
SPC0055-0440 VHM/TIALN	5,50	6,00	95,0	57	44,00
SPC0056-0448 VHM/TIALN	5,60	6,00	95,0	57	44,80
SPC0057-0456 VHM/TIALN	5,70	6,00	95,0	57	45,60
SPC0058-0464 VHM/TIALN	5,80	6,00	95,0	57	46,40
SPC0059-0472 VHM/TIALN	5,90	6,00	95,0	57	47,20
SPC0060-0480 VHM/TIALN	6,00	6,00	95,0	57	48,00
SPC0061-0488 VHM/TIALN	6,10	8,00	114,0	76	48,80
SPC0062-0496 VHM/TIALN	6,20	8,00	114,0	76	49,60
SPC0063-0504 VHM/TIALN	6,30	8,00	114,0	76	50,40
SPC0064-0512 VHM/TIALN	6,40	8,00	114,0	76	51,20
SPC0065-0520 VHM/TIALN	6,50	8,00	114,0	76	52,00
SPC0066-0528 VHM/TIALN	6,60	8,00	114,0	76	52,80
SPC0067-0536 VHM/TIALN	6,70	8,00	114,0	76	53,60
SPC0068-0544 VHM/TIALN	6,80	8,00	114,0	76	54,40
SPC0069-0552 VHM/TIALN	6,90	8,00	114,0	76	55,20
SPC0070-0560 VHM/TIALN	7,00	8,00	114,0	76	56,00
SPC0071-0568 VHM/TIALN	7,10	8,00	114,0	76	56,80



Vollhartmetall-Spiralbohrer

Lange Ausführung, mit Innenkühlung

Solid carbide drills

Long design, with through tool coolant

Ausführung 8 x D / Execution 8 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0072-0576 VHM/TIALN	7,20	8,00	114,0	76	57,60
SPC0073-0584 VHM/TIALN	7,30	8,00	114,0	76	58,40
SPC0074-0592 VHM/TIALN	7,40	8,00	114,0	76	59,20
SPC0075-0600 VHM/TIALN	7,50	8,00	114,0	76	60,00
SPC0076-0608 VHM/TIALN	7,60	8,00	114,0	76	60,80
SPC0077-0616 VHM/TIALN	7,70	8,00	114,0	76	61,60
SPC0078-0624 VHM/TIALN	7,80	8,00	114,0	76	62,40
SPC0079-0632 VHM/TIALN	7,90	8,00	114,0	76	63,20
SPC0080-0640 VHM/TIALN	8,00	8,00	114,0	76	64,00
SPC0081-0648 VHM/TIALN	8,10	10,00	142,0	95	64,80
SPC0082-0656 VHM/TIALN	8,20	10,00	142,0	95	65,60
SPC0083-0664 VHM/TIALN	8,30	10,00	142,0	95	66,40
SPC0084-0672 VHM/TIALN	8,40	10,00	142,0	95	67,20
SPC0085-0680 VHM/TIALN	8,50	10,00	142,0	95	68,00
SPC0086-0688 VHM/TIALN	8,60	10,00	142,0	95	68,80
SPC0087-0696 VHM/TIALN	8,70	10,00	142,0	95	69,60
SPC0088-0704 VHM/TIALN	8,80	10,00	142,0	95	70,40
SPC0089-0712 VHM/TIALN	8,90	10,00	142,0	95	71,20
SPC0090-0720 VHM/TIALN	9,00	10,00	142,0	95	72,00
SPC0091-0728 VHM/TIALN	9,10	10,00	142,0	95	72,80
SPC0092-0736 VHM/TIALN	9,20	10,00	142,0	95	73,60
SPC0093-0744 VHM/TIALN	9,30	10,00	142,0	95	74,40
SPC0094-0752 VHM/TIALN	9,40	10,00	142,0	95	75,20
SPC0095-0760 VHM/TIALN	9,50	10,00	142,0	95	76,00
SPC0096-0768 VHM/TIALN	9,60	10,00	142,0	95	76,80
SPC0097-0776 VHM/TIALN	9,70	10,00	142,0	95	77,60
SPC0098-0784 VHM/TIALN	9,80	10,00	142,0	95	78,40
SPC0099-0792 VHM/TIALN	9,90	10,00	142,0	95	79,20
SPC0100-0800 VHM/TIALN	10,00	10,00	142,0	95	80,00
SPC0101-0808 VHM/TIALN	10,10	12,00	162,0	114	80,80
SPC0102-0816 VHM/TIALN	10,20	12,00	162,0	114	81,60
SPC0103-0824 VHM/TIALN	10,30	12,00	162,0	114	82,40
SPC0104-0832 VHM/TIALN	10,40	12,00	162,0	114	83,20
SPC0105-0840 VHM/TIALN	10,50	12,00	162,0	114	84,00
SPC0106-0848 VHM/TIALN	10,60	12,00	162,0	114	84,80
SPC0107-0856 VHM/TIALN	10,70	12,00	162,0	114	85,60
SPC0108-0864 VHM/TIALN	10,80	12,00	162,0	114	86,40
SPC0109-0872 VHM/TIALN	10,90	12,00	162,0	114	87,20
SPC0110-0880 VHM/TIALN	11,00	12,00	162,0	114	88,00
SPC0111-0888 VHM/TIALN	11,10	12,00	162,0	114	88,80
SPC0112-0896 VHM/TIALN	11,20	12,00	162,0	114	89,60
SPC0113-0904 VHM/TIALN	11,30	12,00	162,0	114	90,40
SPC0114-0912 VHM/TIALN	11,40	12,00	162,0	114	91,20
SPC0115-0920 VHM/TIALN	11,50	12,00	162,0	114	92,00
SPC0116-0928 VHM/TIALN	11,60	12,00	162,0	114	92,80
SPC0117-0936 VHM/TIALN	11,70	12,00	162,0	114	93,60
SPC0118-0944 VHM/TIALN	11,80	12,00	162,0	114	94,40
SPC0119-0952 VHM/TIALN	11,90	12,00	162,0	114	95,20
SPC0120-0960 VHM/TIALN	12,00	12,00	162,0	114	96,00

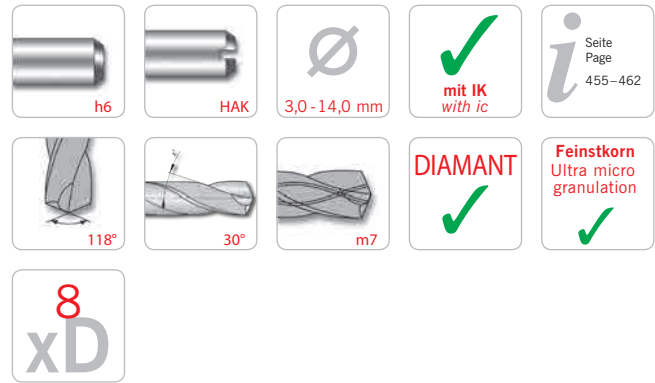
Vollhartmetall-Spiralbohrer

Lange Ausführung, mit Innenkühlung, Diamant beschichtet



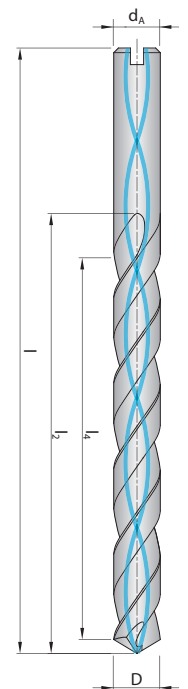
Solid carbide drills

Long design, with through tool coolant, diamond coated



Ausführung 8 x D für Aluminium / Execution 8 x D for aluminium

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0030-0240-ALU VHM/DLC	3,00	6,00	72,0	34	24,00
SPC0031-0248-ALU VHM/DLC	3,10	6,00	72,0	34	24,80
SPC0032-0256-ALU VHM/DLC	3,20	6,00	72,0	34	25,60
SPC0033-0264-ALU VHM/DLC	3,30	6,00	72,0	34	26,40
SPC0034-0272-ALU VHM/DLC	3,40	6,00	72,0	34	27,20
SPC0035-0280-ALU VHM/DLC	3,50	6,00	72,0	34	28,00
SPC0036-0288-ALU VHM/DLC	3,60	6,00	72,0	34	28,80
SPC0037-0296-ALU VHM/DLC	3,70	6,00	72,0	34	29,60
SPC0038-0304-ALU VHM/DLC	3,80	6,00	81,0	43	30,40
SPC0039-0312-ALU VHM/DLC	3,90	6,00	81,0	43	31,20
SPC0040-0320-ALU VHM/DLC	4,00	6,00	81,0	43	32,00
SPC0041-0328-ALU VHM/DLC	4,10	6,00	81,0	43	32,80
SPC0042-0336-ALU VHM/DLC	4,20	6,00	81,0	43	33,60
SPC0043-0344-ALU VHM/DLC	4,30	6,00	81,0	43	34,40
SPC0044-0352-ALU VHM/DLC	4,40	6,00	81,0	43	35,20
SPC0045-0360-ALU VHM/DLC	4,50	6,00	81,0	43	36,00
SPC0046-0368-ALU VHM/DLC	4,60	6,00	81,0	43	36,80
SPC0047-0376-ALU VHM/DLC	4,70	6,00	81,0	43	37,60
SPC0048-0384-ALU VHM/DLC	4,80	6,00	95,0	57	38,40
SPC0049-0392-ALU VHM/DLC	4,90	6,00	95,0	57	39,20
SPC0050-0400-ALU VHM/DLC	5,00	6,00	95,0	57	40,00
SPC0051-0408-ALU VHM/DLC	5,10	6,00	95,0	57	40,80
SPC0052-0416-ALU VHM/DLC	5,20	6,00	95,0	57	41,60
SPC0053-0424-ALU VHM/DLC	5,30	6,00	95,0	57	42,40
SPC0054-0432-ALU VHM/DLC	5,40	6,00	95,0	57	43,20
SPC0055-0440-ALU VHM/DLC	5,50	6,00	95,0	57	44,00
SPC0056-0448-ALU VHM/DLC	5,60	6,00	95,0	57	44,80
SPC0057-0456-ALU VHM/DLC	5,70	6,00	95,0	57	45,60
SPC0058-0464-ALU VHM/DLC	5,80	6,00	95,0	57	46,40
SPC0059-0472-ALU VHM/DLC	5,90	6,00	95,0	57	47,20
SPC0060-0480-ALU VHM/DLC	6,00	6,00	95,0	57	48,00
SPC0061-0488-ALU VHM/DLC	6,10	8,00	114,0	76	48,80
SPC0062-0496-ALU VHM/DLC	6,20	8,00	114,0	76	49,60
SPC0063-0504-ALU VHM/DLC	6,30	8,00	114,0	76	50,40
SPC0064-0512-ALU VHM/DLC	6,40	8,00	114,0	76	51,20
SPC0065-0520-ALU VHM/DLC	6,50	8,00	114,0	76	52,00
SPC0066-0528-ALU VHM/DLC	6,60	8,00	114,0	76	52,80
SPC0067-0536-ALU VHM/DLC	6,70	8,00	114,0	76	53,60
SPC0068-0544-ALU VHM/DLC	6,80	8,00	114,0	76	54,40
SPC0069-0552-ALU VHM/DLC	6,90	8,00	114,0	76	55,20
SPC0070-0560-ALU VHM/DLC	7,00	8,00	114,0	76	56,00
SPC0071-0568-ALU VHM/DLC	7,10	8,00	114,0	76	56,80



Vollhartmetall-Spiralbohrer

Lange Ausführung, mit Innenkühlung, Diamant beschichtet

Solid carbide drills

Long design, with through tool coolant, diamond coated

Ausführung 8 x D für Aluminium / Execution 8 x D for aluminium

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0072-0576-ALU VHM/DLC	7,20	8,00	114,0	76	57,60
SPC0073-0584-ALU VHM/DLC	7,30	8,00	114,0	76	58,40
SPC0074-0592-ALU VHM/DLC	7,40	8,00	114,0	76	59,20
SPC0075-0600-ALU VHM/DLC	7,50	8,00	114,0	76	60,00
SPC0076-0608-ALU VHM/DLC	7,60	8,00	114,0	76	60,80
SPC0077-0616-ALU VHM/DLC	7,70	8,00	114,0	76	61,60
SPC0078-0624-ALU VHM/DLC	7,80	8,00	114,0	76	62,40
SPC0079-0632-ALU VHM/DLC	7,90	8,00	114,0	76	63,20
SPC0080-0640-ALU VHM/DLC	8,00	8,00	114,0	76	64,00
SPC0081-0648-ALU VHM/DLC	8,10	10,00	142,0	95	64,80
SPC0082-0656-ALU VHM/DLC	8,20	10,00	142,0	95	65,60
SPC0083-0664-ALU VHM/DLC	8,30	10,00	142,0	95	66,40
SPC0084-0672-ALU VHM/DLC	8,40	10,00	142,0	95	67,20
SPC0085-0680-ALU VHM/DLC	8,50	10,00	142,0	95	68,00
SPC0086-0688-ALU VHM/DLC	8,60	10,00	142,0	95	68,80
SPC0087-0696-ALU VHM/DLC	8,70	10,00	142,0	95	69,60
SPC0088-0704-ALU VHM/DLC	8,80	10,00	142,0	95	70,40
SPC0089-0712-ALU VHM/DLC	8,90	10,00	142,0	95	71,20
SPC0090-0720-ALU VHM/DLC	9,00	10,00	142,0	95	72,00
SPC0091-0728-ALU VHM/DLC	9,10	10,00	142,0	95	72,80
SPC0092-0736-ALU VHM/DLC	9,20	10,00	142,0	95	73,60
SPC0093-0744-ALU VHM/DLC	9,30	10,00	142,0	95	74,40
SPC0094-0752-ALU VHM/DLC	9,40	10,00	142,0	95	75,20
SPC0095-0760-ALU VHM/DLC	9,50	10,00	142,0	95	76,00
SPC0096-0768-ALU VHM/DLC	9,60	10,00	142,0	95	76,80
SPC0097-0776-ALU VHM/DLC	9,70	10,00	142,0	95	77,60
SPC0098-0784-ALU VHM/DLC	9,80	10,00	142,0	95	78,40
SPC0099-0792-ALU VHM/DLC	9,90	10,00	142,0	95	79,20
SPC0100-0800-ALU VHM/DLC	10,00	10,00	142,0	95	80,00
SPC0101-0808-ALU VHM/DLC	10,10	12,00	162,0	114	80,80
SPC0102-0816-ALU VHM/DLC	10,20	12,00	162,0	114	81,60
SPC0103-0824-ALU VHM/DLC	10,30	12,00	162,0	114	82,40
SPC0104-0832-ALU VHM/DLC	10,40	12,00	162,0	114	83,20
SPC0105-0840-ALU VHM/DLC	10,50	12,00	162,0	114	84,00
SPC0106-0848-ALU VHM/DLC	10,60	12,00	162,0	114	84,80
SPC0107-0856-ALU VHM/DLC	10,70	12,00	162,0	114	85,60
SPC0108-0864-ALU VHM/DLC	10,80	12,00	162,0	114	86,40
SPC0109-0872-ALU VHM/DLC	10,90	12,00	162,0	114	87,20
SPC0110-0880-ALU VHM/DLC	11,00	12,00	162,0	114	88,00
SPC0111-0888-ALU VHM/DLC	11,10	12,00	162,0	114	88,80
SPC0112-0896-ALU VHM/DLC	11,20	12,00	162,0	114	89,60
SPC0113-0904-ALU VHM/DLC	11,30	12,00	162,0	114	90,40
SPC0114-0912-ALU VHM/DLC	11,40	12,00	162,0	114	91,20
SPC0115-0920-ALU VHM/DLC	11,50	12,00	162,0	114	92,00
SPC0116-0928-ALU VHM/DLC	11,60	12,00	162,0	114	92,80
SPC0117-0936-ALU VHM/DLC	11,70	12,00	162,0	114	93,60
SPC0118-0944-ALU VHM/DLC	11,80	12,00	162,0	114	94,40
SPC0119-0952-ALU VHM/DLC	11,90	12,00	162,0	114	95,20
SPC0120-0960-ALU VHM/DLC	12,00	12,00	162,0	114	96,00
SPC0125-1000-ALU VHM/DLC	12,50	14,00	178,0	133	100,00
SPC0130-1040-ALU VHM/DLC	13,00	14,00	178,0	133	104,00
SPC0135-1080-ALU VHM/DLC	13,50	14,00	178,0	133	108,00
SPC0140-1120-ALU VHM/DLC	14,00	14,00	178,0	133	112,00

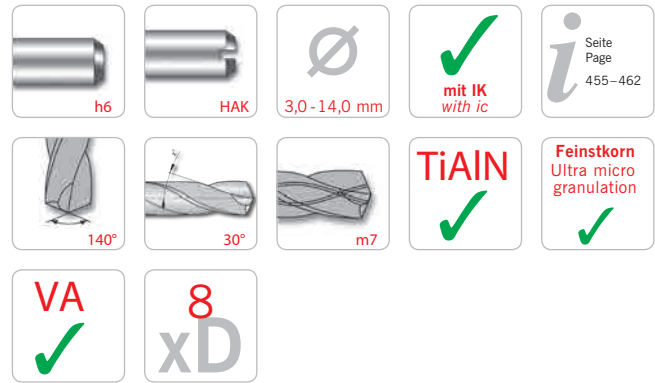
Vollhartmetall-Spiralbohrer

Lange Ausführung, mit Innenkühlung



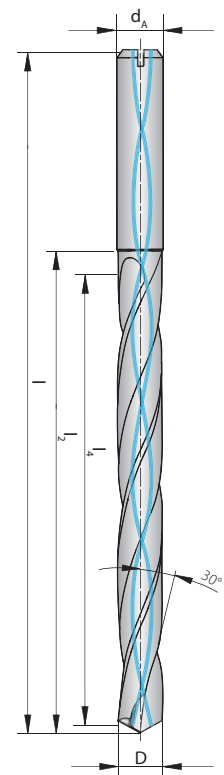
Solid carbide drills

Long design, with through tool coolant



Ausführung 8 x D für rostfreie Stähle / Execution 8 x D for stainless steel

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0030-0240-VA VHM/TIALN	3,00	6,00	72,0	34	24,00
SPC0031-0248-VA VHM/TIALN	3,10	6,00	72,0	34	24,80
SPC0032-0256-VA VHM/TIALN	3,20	6,00	72,0	34	25,60
SPC0033-0264-VA VHM/TIALN	3,30	6,00	72,0	34	26,40
SPC0034-0272-VA VHM/TIALN	3,40	6,00	72,0	34	27,20
SPC0035-0280-VA VHM/TIALN	3,50	6,00	72,0	34	28,00
SPC0036-0288-VA VHM/TIALN	3,60	6,00	72,0	34	28,80
SPC0037-0296-VA VHM/TIALN	3,70	6,00	72,0	34	29,60
SPC0038-0304-VA VHM/TIALN	3,80	6,00	81,0	43	30,40
SPC0039-0312-VA VHM/TIALN	3,90	6,00	81,0	43	31,20
SPC0040-0320-VA VHM/TIALN	4,00	6,00	81,0	43	32,00
SPC0041-0328-VA VHM/TIALN	4,10	6,00	81,0	43	32,80
SPC0042-0336-VA VHM/TIALN	4,20	6,00	81,0	43	33,60
SPC0043-0344-VA VHM/TIALN	4,30	6,00	81,0	43	34,40
SPC0044-0352-VA VHM/TIALN	4,40	6,00	81,0	43	35,20
SPC0045-0360-VA VHM/TIALN	4,50	6,00	81,0	43	36,00
SPC0046-0368-VA VHM/TIALN	4,60	6,00	81,0	43	36,80
SPC0047-0376-VA VHM/TIALN	4,70	6,00	81,0	43	37,60
SPC0048-0384-VA VHM/TIALN	4,80	6,00	95,0	57	38,40
SPC0049-0392-VA VHM/TIALN	4,90	6,00	95,0	57	39,20
SPC0050-0400-VA VHM/TIALN	5,00	6,00	95,0	57	40,00
SPC0051-0408-VA VHM/TIALN	5,10	6,00	95,0	57	40,80
SPC0052-0416-VA VHM/TIALN	5,20	6,00	95,0	57	41,60
SPC0053-0424-VA VHM/TIALN	5,30	6,00	95,0	57	42,40
SPC0054-0432-VA VHM/TIALN	5,40	6,00	95,0	57	43,20
SPC0055-0440-VA VHM/TIALN	5,50	6,00	95,0	57	44,00
SPC0056-0448-VA VHM/TIALN	5,60	6,00	95,0	57	44,80
SPC0057-0456-VA VHM/TIALN	5,70	6,00	95,0	57	45,60
SPC0058-0464-VA VHM/TIALN	5,80	6,00	95,0	57	46,40
SPC0059-0472-VA VHM/TIALN	5,90	6,00	95,0	57	47,20
SPC0060-0480-VA VHM/TIALN	6,00	6,00	95,0	57	48,00
SPC0061-0488-VA VHM/TIALN	6,10	8,00	114,0	76	48,80
SPC0062-0496-VA VHM/TIALN	6,20	8,00	114,0	76	49,60
SPC0063-0504-VA VHM/TIALN	6,30	8,00	114,0	76	50,40
SPC0064-0512-VA VHM/TIALN	6,40	8,00	114,0	76	51,20
SPC0065-0520-VA VHM/TIALN	6,50	8,00	114,0	76	52,00
SPC0066-0528-VA VHM/TIALN	6,60	8,00	114,0	76	52,80
SPC0067-0536-VA VHM/TIALN	6,70	8,00	114,0	76	53,60
SPC0068-0544-VA VHM/TIALN	6,80	8,00	114,0	76	54,40
SPC0069-0552-VA VHM/TIALN	6,90	8,00	114,0	76	55,20
SPC0070-0560-VA VHM/TIALN	7,00	8,00	114,0	76	56,00
SPC0071-0568-VA VHM/TIALN	7,10	8,00	114,0	76	56,80



Vollhartmetall-Spiralbohrer

Lange Ausführung, mit Innenkühlung

Solid carbide drills

Long design, with through tool coolant

Ausführung 8 x D für rostfreie Stähle / Execution 8 x D for stainless steel

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0072-0576-VA VHM/TIALN	7,20	8,00	114,0	76	57,60
SPC0073-0584-VA VHM/TIALN	7,30	8,00	114,0	76	58,40
SPC0074-0592-VA VHM/TIALN	7,40	8,00	114,0	76	59,20
SPC0075-0600-VA VHM/TIALN	7,50	8,00	114,0	76	60,00
SPC0076-0608-VA VHM/TIALN	7,60	8,00	114,0	76	60,80
SPC0077-0616-VA VHM/TIALN	7,70	8,00	114,0	76	61,60
SPC0078-0624-VA VHM/TIALN	7,80	8,00	114,0	76	62,40
SPC0079-0632-VA VHM/TIALN	7,90	8,00	114,0	76	63,20
SPC0080-0640-VA VHM/TIALN	8,00	8,00	114,0	76	64,00
SPC0081-0648-VA VHM/TIALN	8,10	10,00	142,0	95	64,80
SPC0082-0656-VA VHM/TIALN	8,20	10,00	142,0	95	65,60
SPC0083-0664-VA VHM/TIALN	8,30	10,00	142,0	95	66,40
SPC0084-0672-VA VHM/TIALN	8,40	10,00	142,0	95	67,20
SPC0085-0680-VA VHM/TIALN	8,50	10,00	142,0	95	68,00
SPC0086-0688-VA VHM/TIALN	8,60	10,00	142,0	95	68,80
SPC0087-0696-VA VHM/TIALN	8,70	10,00	142,0	95	69,60
SPC0088-0704-VA VHM/TIALN	8,80	10,00	142,0	95	70,40
SPC0089-0712-VA VHM/TIALN	8,90	10,00	142,0	95	71,20
SPC0090-0720-VA VHM/TIALN	9,00	10,00	142,0	95	72,00
SPC0091-0728-VA VHM/TIALN	9,10	10,00	142,0	95	72,80
SPC0092-0736-VA VHM/TIALN	9,20	10,00	142,0	95	73,60
SPC0093-0744-VA VHM/TIALN	9,30	10,00	142,0	95	74,40
SPC0094-0752-VA VHM/TIALN	9,40	10,00	142,0	95	75,20
SPC0095-0760-VA VHM/TIALN	9,50	10,00	142,0	95	76,00
SPC0096-0768-VA VHM/TIALN	9,60	10,00	142,0	95	76,80
SPC0097-0776-VA VHM/TIALN	9,70	10,00	142,0	95	77,60
SPC0098-0784-VA VHM/TIALN	9,80	10,00	142,0	95	78,40
SPC0099-0792-VA VHM/TIALN	9,90	10,00	142,0	95	79,20
SPC0100-0800-VA VHM/TIALN	10,00	10,00	142,0	95	80,00
SPC0101-0808-VA VHM/TIALN	10,10	12,00	162,0	114	80,80
SPC0102-0816-VA VHM/TIALN	10,20	12,00	162,0	114	81,60
SPC0103-0824-VA VHM/TIALN	10,30	12,00	162,0	114	82,40
SPC0104-0832-VA VHM/TIALN	10,40	12,00	162,0	114	83,20
SPC0105-0840-VA VHM/TIALN	10,50	12,00	162,0	114	84,00
SPC0106-0848-VA VHM/TIALN	10,60	12,00	162,0	114	84,80
SPC0107-0856-VA VHM/TIALN	10,70	12,00	162,0	114	85,60
SPC0108-0864-VA VHM/TIALN	10,80	12,00	162,0	114	86,40
SPC0109-0872-VA VHM/TIALN	10,90	12,00	162,0	114	87,20
SPC0110-0880-VA VHM/TIALN	11,00	12,00	162,0	114	88,00
SPC0111-0888-VA VHM/TIALN	11,10	12,00	162,0	114	88,80
SPC0112-0896-VA VHM/TIALN	11,20	12,00	162,0	114	89,60
SPC0113-0904-VA VHM/TIALN	11,30	12,00	162,0	114	90,40
SPC0114-0912-VA VHM/TIALN	11,40	12,00	162,0	114	91,20
SPC0115-0920-VA VHM/TIALN	11,50	12,00	162,0	114	92,00
SPC0116-0928-VA VHM/TIALN	11,60	12,00	162,0	114	92,80
SPC0117-0936-VA VHM/TIALN	11,70	12,00	162,0	114	93,60
SPC0118-0944-VA VHM/TIALN	11,80	12,00	162,0	114	94,40
SPC0119-0952-VA VHM/TIALN	11,90	12,00	162,0	114	95,20
SPC0120-0960-VA VHM/TIALN	12,00	12,00	162,0	114	96,00
SPC0125-1000-VA VHM/TIALN	12,50	14,00	178,0	133	100,00
SPC0130-1040-VA VHM/TIALN	13,00	14,00	178,0	133	104,00
SPC0135-1080-VA VHM/TIALN	13,50	14,00	178,0	133	108,00
SPC0140-1120-VA VHM/TIALN	14,00	14,00	178,0	133	112,00

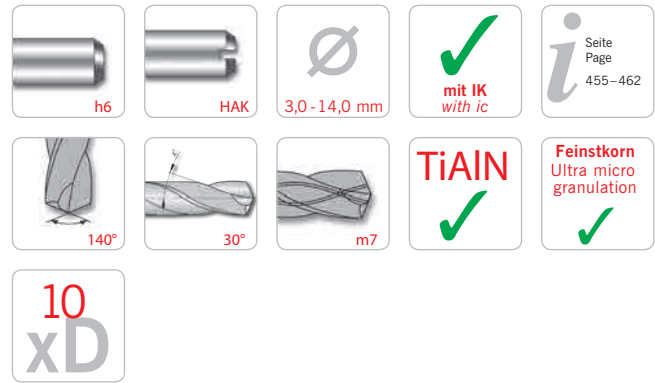
Vollhartmetall-Spiralbohrer

Extra lange Ausführung, mit Innenkühlung



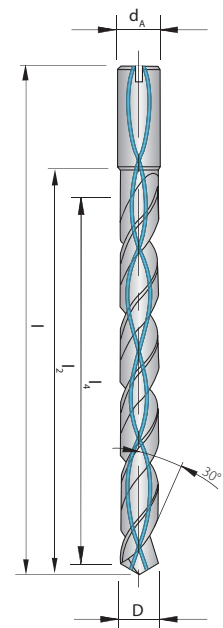
Solid carbide drills

Extra long design, with through tool coolant



Ausführung 10 x D / Execution 10 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0030-0300-XL VHM/TIALN N	3,00	6,00	80,0	40	30,00
SPC0033-0330-XL VHM/TIALN N	3,30	6,00	87,0	47	33,00
SPC0035-0350-XL VHM/TIALN N	3,50	6,00	87,0	47	35,00
SPC0040-0400-XL VHM/TIALN N	4,00	6,00	93,0	53	40,00
SPC0042-0420-XL VHM/TIALN N	4,20	6,00	100,0	60	42,00
SPC0045-0450-XL VHM/TIALN N	4,50	6,00	100,0	60	45,00
SPC0050-0500-XL VHM/TIALN N	5,00	6,00	106,0	66	50,00
SPC0055-0550-XL VHM/TIALN N	5,50	6,00	113,0	73	55,00
SPC0060-0600-XL VHM/TIALN N	6,00	6,00	119,0	79	60,00
SPC0065-0650-XL VHM/TIALN N	6,50	8,00	126,0	86	65,00
SPC0068-0680-XL VHM/TIALN N	6,80	8,00	132,0	92	68,00
SPC0070-0700-XL VHM/TIALN N	7,00	8,00	132,0	92	70,00
SPC0075-0750-XL VHM/TIALN N	7,50	8,00	139,0	99	75,00
SPC0080-0800-XL VHM/TIALN N	8,00	8,00	145,0	105	80,00
SPC0085-0850-XL VHM/TIALN N	8,50	10,00	156,0	112	85,00
SPC0090-0900-XL VHM/TIALN N	9,00	10,00	162,0	118	90,00
SPC0095-0950-XL VHM/TIALN N	9,50	10,00	170,0	126	95,00
SPC0100-1000-XL VHM/TIALN N	10,00	10,00	176,0	132	100,00
SPC0105-1050-XL VHM/TIALN N	10,50	12,00	188,0	139	105,00
SPC0110-1100-XL VHM/TIALN N	11,00	12,00	195,0	145	110,00
SPC0115-1150-XL VHM/TIALN N	11,50	12,00	201,0	152	115,00
SPC0120-1200-XL VHM/TIALN N	12,00	12,00	207,0	158	120,00
SPC0125-1250-XL VHM/TIALN N	12,50	14,00	214,0	165	125,00
SPC0130-1300-XL VHM/TIALN N	13,00	14,00	220,0	171	130,00
SPC0135-1350-XL VHM/TIALN N	13,50	14,00	227,0	178	135,00
SPC0140-1400-XL VHM/TIALN N	14,00	14,00	233,0	184	140,00



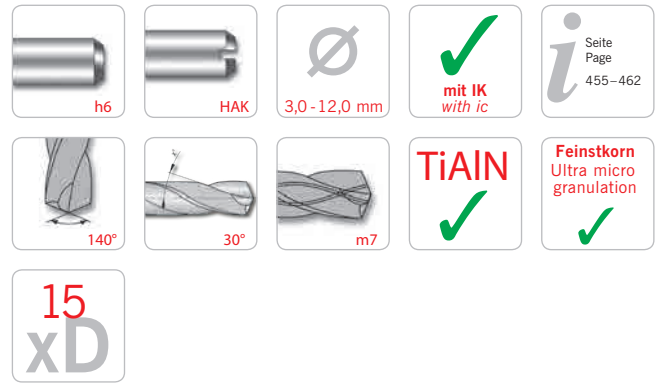
Vollhartmetall-Spiralbohrer

Extra lange Ausführung, mit Innenkühlung



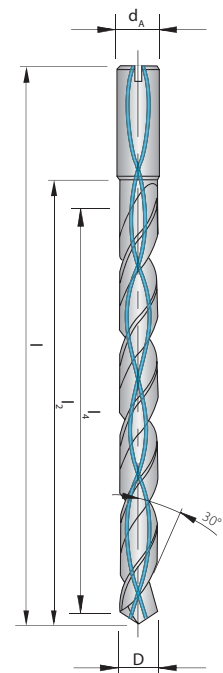
Solid carbide drills

Extra long design, with through tool coolant



Ausführung 15 x D / Execution 15 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0030-0450-XL VHM/TIALN	3,00	6,00	95,0	55	45,00
SPC0032-0480-XL VHM/TIALN	3,20	6,00	104,0	64	48,00
SPC0035-0525-XL VHM/TIALN	3,50	6,00	104,0	64	52,50
SPC0040-0600-XL VHM/TIALN	4,00	6,00	113,0	73	60,00
SPC0045-0675-XL VHM/TIALN	4,50	6,00	122,0	82	67,50
SPC0050-0750-XL VHM/TIALN	5,00	6,00	131,0	91	75,00
SPC0055-0825-XL VHM/TIALN	5,50	6,00	140,0	100	82,50
SPC0060-0900-XL VHM/TIALN	6,00	6,00	149,0	109	90,00
SPC0070-1050-XL VHM/TIALN	7,00	8,00	167,0	127	105,00
SPC0080-1200-XL VHM/TIALN	8,00	8,00	185,0	145	120,00
SPC0085-1275-XL VHM/TIALN	8,50	10,00	198,0	154	127,50
SPC0090-1350-XL VHM/TIALN	9,00	10,00	207,0	163	135,00
SPC0100-1500-XL VHM/TIALN	10,00	10,00	226,0	182	150,00
SPC0105-1575-XL VHM/TIALN	10,50	12,00	240,0	191	157,50
SPC0110-1650-XL VHM/TIALN	11,00	12,00	249,0	200	165,00
SPC0115-1725-XL VHM/TIALN	11,50	12,00	258,0	209	172,50
SPC0120-1800-XL VHM/TIALN	12,00	12,00	267,0	218	180,00



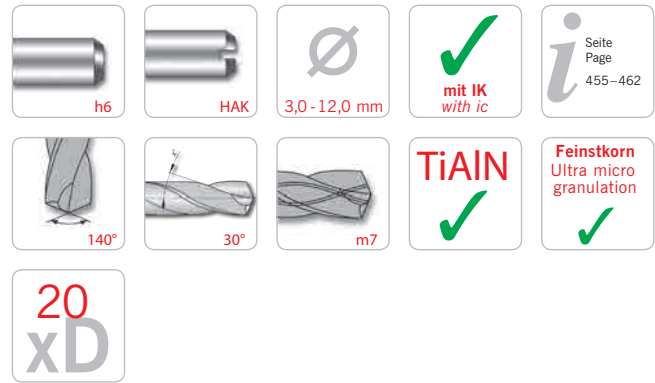
Vollhartmetall-Spiralbohrer

Extra lange Ausführung, mit Innenkühlung



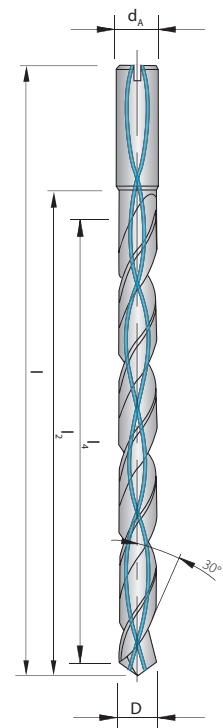
Solid carbide drills

Extra long design, with through tool coolant



Ausführung 20 x D / Execution 20 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0030-0600-XL VHM/TIALN N	3,00	6,00	110,0	70	60,00
SPC0032-0640-XL VHM/TIALN N	3,20	6,00	122,0	82	64,00
SPC0035-0700-XL VHM/TIALN N	3,50	6,00	122,0	82	70,00
SPC0040-0800-XL VHM/TIALN N	4,00	6,00	133,0	93	80,00
SPC0045-0900-XL VHM/TIALN N	4,50	6,00	145,0	105	90,00
SPC0048-0960-XL VHM/TIALN N	4,80	6,00	156,0	116	96,00
SPC0050-1000-XL VHM/TIALN N	5,00	6,00	156,0	116	100,00
SPC0055-1100-XL VHM/TIALN N	5,50	6,00	168,0	128	110,00
SPC0060-1200-XL VHM/TIALN N	6,00	6,00	179,0	139	120,00
SPC0070-1400-XL VHM/TIALN N	7,00	8,00	202,0	162	140,00
SPC0080-1600-XL VHM/TIALN N	8,00	8,00	225,0	185	160,00
SPC0085-1700-XL VHM/TIALN N	8,50	10,00	241,0	197	170,00
SPC0090-1800-XL VHM/TIALN N	9,00	10,00	252,0	208	180,00
SPC0100-2000-XL VHM/TIALN N	10,00	10,00	276,0	232	200,00
SPC0105-2100-XL VHM/TIALN N	10,50	12,00	293,0	244	210,00
SPC0120-2400-XL VHM/TIALN N	12,00	12,00	327,0	278	240,00



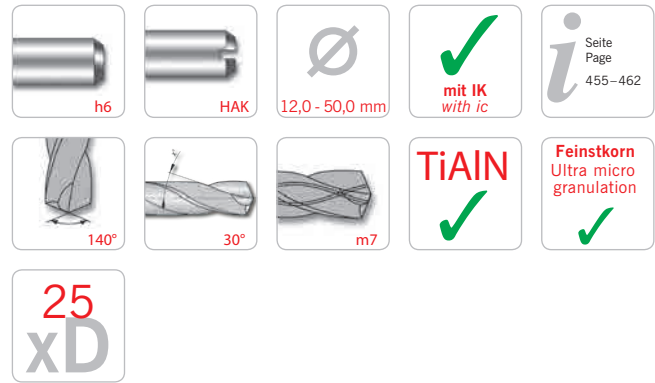
Vollhartmetall-Spiralbohrer

Extra lange Ausführung, mit Innenkühlung



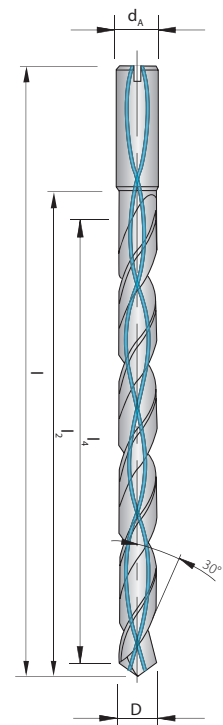
Solid carbide drills

Extra long design, with through tool coolant



Ausführung 25 x D / Execution 25 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0030-0750-XL VHM/TIALN N	3,00	6,00	125,0	85	75,00
SPC0035-0875-XL VHM/TIALN N	3,50	6,00	139,0	99	87,50
SPC0040-1000-XL VHM/TIALN N	4,00	6,00	153,0	113	100,00
SPC0045-1125-XL VHM/TIALN N	4,50	6,00	167,0	127	112,50
SPC0050-1250-XL VHM/TIALN N	5,00	6,00	181,0	141	125,00
SPC0055-1375-XL VHM/TIALN N	5,50	6,00	195,0	155	137,50
SPC0060-1500-XL VHM/TIALN N	6,00	6,00	209,0	169	150,00
SPC0070-1750-XL VHM/TIALN N	7,00	8,00	237,0	197	175,00
SPC0080-2000-XL VHM/TIALN N	8,00	8,00	265,0	225	200,00
SPC0085-2125-XL VHM/TIALN N	8,50	10,00	283,0	239	212,50
SPC0090-2250-XL VHM/TIALN N	9,00	10,00	297,0	253	225,00
SPC0100-2500-XL VHM/TIALN N	10,00	10,00	326,0	282	250,00



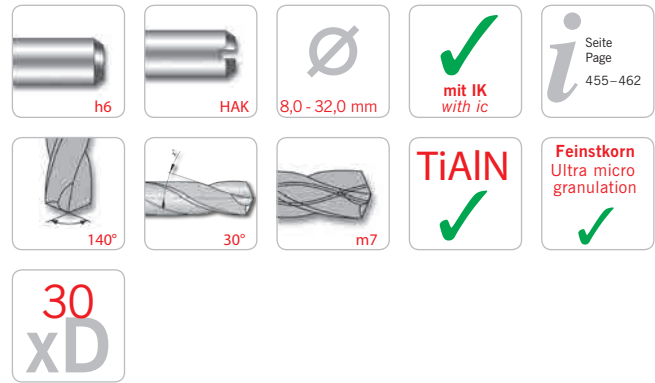
Vollhartmetall-Spiralbohrer

Extra lange Ausführung, mit Innenkühlung



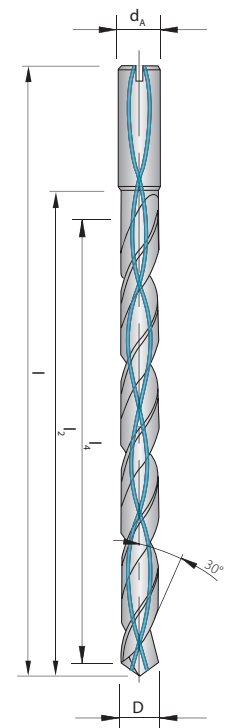
Solid carbide drills

Extra long design, with through tool coolant



Ausführung 30 x D / Execution 30 x D

Bezeichnung Designation	D m7	d _A h6	l	l ₂	l ₄
SPC0030-0900-XL VHM/TIALN N	3,00	6,00	140,0	100	90,00
SPC0035-1050-XL VHM/TIALN N	3,50	6,00	157,0	117	105,00
SPC0040-1200-XL VHM/TIALN N	4,00	6,00	173,0	133	120,00
SPC0045-1350-XL VHM/TIALN N	4,50	6,00	190,0	150	135,00
SPC0050-1500-XL VHM/TIALN N	5,00	6,00	206,0	166	150,00
SPC0055-1650-XL VHM/TIALN N	5,50	6,00	223,0	183	165,00
SPC0060-1800-XL VHM/TIALN N	6,00	6,00	239,0	199	180,00
SPC0070-2100-XL VHM/TIALN N	7,00	8,00	272,0	232	210,00
SPC0080-2400-XL VHM/TIALN N	8,00	8,00	305,0	265	240,00



Vollhartmetall NC-Anbohrer

2 Schneiden, 90°



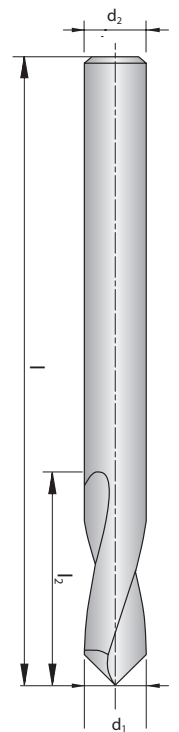
Solid carbide NC spot drills

2 flutes, 90°



NC – Anbohrer 90° / NC spot drill 90°

Bezeichnung Designation	D m7	d _A h6	l	l ₂
SPA0020-090 VHM/TIALN	2,00	2,00	40,0	8
SPA0030-090 VHM/TIALN	3,00	3,00	40,0	10
SPA0040-090 VHM/TIALN	4,00	4,00	40,0	12
SPA0050-090 VHM/TIALN	5,00	5,00	50,0	15
SPA0060-090 VHM/TIALN	6,00	6,00	50,0	20
SPA0080-090 VHM/TIALN	8,00	8,00	63,0	22
SPA0100-090 VHM/TIALN	10,00	10,00	74,0	23
SPA0120-090 VHM/TIALN	12,00	12,00	83,0	25
SPA0140-090 VHM/TIALN	14,00	14,00	83,0	26
SPA0160-090 VHM/TIALN	16,00	16,00	92,0	28
SPA0180-090 VHM/TIALN	18,00	18,00	92,0	30
SPA0200-090 VHM/TIALN	20,00	20,00	104,0	30



Vollhartmetall NC-Anbohrer

2 Schneiden, 120°



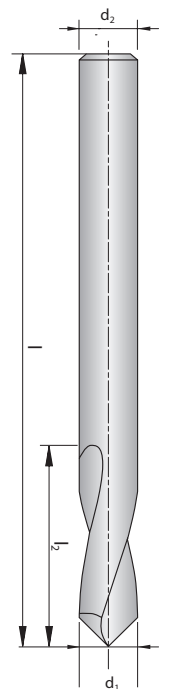
Solid carbide NC spot drills

2 flutes, 120°



NC - Anbohrer 120° / NC spot drill 120°

Bezeichnung Designation	D m7	d _A h6	l	l ₂
SPA0020-120 VHM/TIALN	2,00	2,00	40,0	8
SPA0030-120 VHM/TIALN	3,00	3,00	40,0	10
SPA0040-120 VHM/TIALN	4,00	4,00	40,0	12
SPA0050-120 VHM/TIALN	5,00	5,00	50,0	15
SPA0060-120 VHM/TIALN	6,00	6,00	50,0	20
SPA0080-120 VHM/TIALN	8,00	8,00	63,0	22
SPA0100-120 VHM/TIALN	10,00	10,00	74,0	23
SPA0120-120 VHM/TIALN	12,00	12,00	83,0	25
SPA0140-120 VHM/TIALN	14,00	14,00	83,0	26
SPA0160-120 VHM/TIALN	16,00	16,00	92,0	28
SPA0180-120 VHM/TIALN	18,00	18,00	92,0	30
SPA0200-120 VHM/TIALN	20,00	20,00	104,0	30



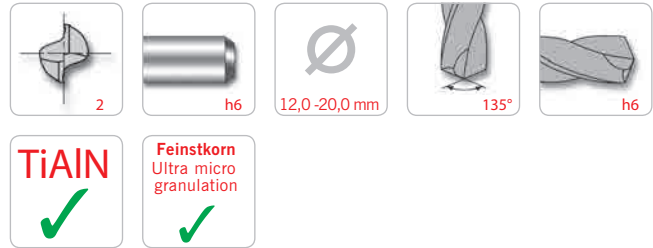
Vollhartmetall NC-Anbohrer

2 Schneiden, 135°



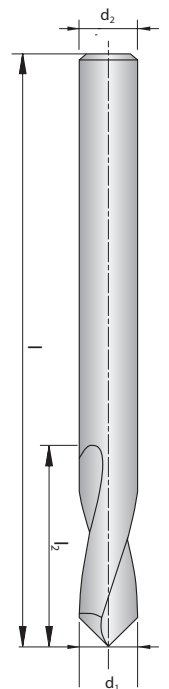
Solid carbide NC spot drills

2 flutes, 135°



NC - Anbohrer 135° / NC spot drill 135°

Bezeichnung Designation	D m7	d _A h6	l	l ₂
SPA0120-135 VHM/TIALN N	12,00	12,00	83,0	25
SPA0160-135 VHM/TIALN N	16,00	16,00	92,0	28
SPA0200-135 VHM/TIALN N	20,00	20,00	104,0	30



PM-HSS NC-Anbohrer

2 Schneiden, 90°



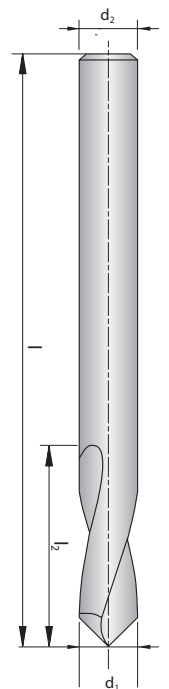
Powder metal NC spot drills

2 flutes, 90°



NC - Anbohrer 90° / NC spot drill 90°

Bezeichnung Designation	D m7	d _A h6	l	l ₂
SPA0020-090-PM TIALN	2,00	2,00	40,0	8
SPA0030-090-PM TIALN	3,00	3,00	40,0	10
SPA0040-090-PM TIALN	4,00	4,00	40,0	12
SPA0050-090-PM TIALN	5,00	5,00	50,0	15
SPA0060-090-PM TIALN	6,00	6,00	50,0	20
SPA0080-090-PM TIALN	8,00	8,00	63,0	22
SPA0100-090-PM TIALN	10,00	10,00	74,0	23
SPA0120-090-PM TIALN	12,00	12,00	83,0	25
SPA0140-090-PM TIALN	14,00	14,00	83,0	26
SPA0160-090-PM TIALN	16,00	16,00	92,0	28
SPA0180-090-PM TIALN	18,00	18,00	92,0	30
SPA0200-090-PM TIALN	20,00	20,00	104,0	30



PM-HSS NC-Anbohrer

2 Schneiden, 120°



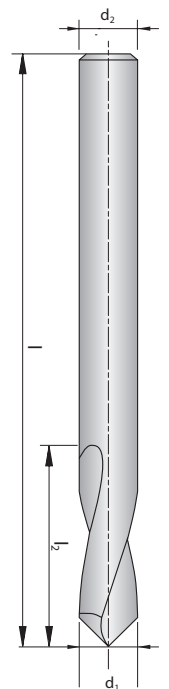
Powder metal NC spot drills

2 flutes, 120°



NC - Anbohrer 120° / NC spot drill 120°

Bezeichnung Designation	D m7	d _A h6	l	l ₂
SPA0020-120-PM TIALN	2,00	2,00	40,0	8
SPA0030-120-PM TIALN	3,00	3,00	40,0	10
SPA0040-120-PM TIALN	4,00	4,00	40,0	12
SPA0050-120-PM TIALN	5,00	5,00	50,0	15
SPA0060-120-PM TIALN	6,00	6,00	50,0	20
SPA0080-120-PM TIALN	8,00	8,00	63,0	22
SPA0100-120-PM TIALN	10,00	10,00	74,0	23
SPA0120-120-PM TIALN	12,00	12,00	83,0	25
SPA0140-120-PM TIALN	14,00	14,00	83,0	26
SPA0160-120-PM TIALN	16,00	16,00	92,0	28
SPA0180-120-PM TIALN	18,00	18,00	92,0	30
SPA0200-120-PM TIALN	20,00	20,00	104,0	30



PM-HSS NC-Anbohrer

2 Schneiden, 135°



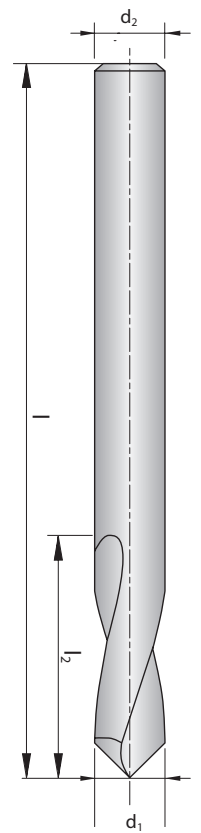
Powder metal NC spot drills

2 flutes, 135°



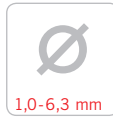
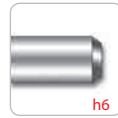
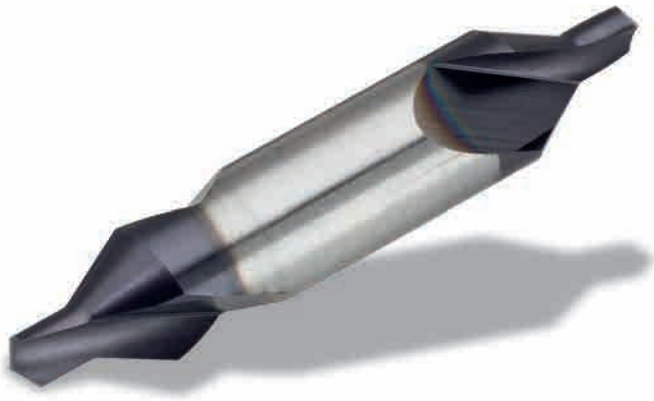
NC - Anbohrer 135° / NC spot drill 135°

Bezeichnung Designation	D m7	d _A h6	l	l ₂
SPA0120-135-PM TiAlN	12,00	12,00	83,0	25
SPA0160-135-PM TiAlN	16,00	16,00	92,0	28
SPA0200-135-PM TiAlN	20,00	20,00	104,0	30



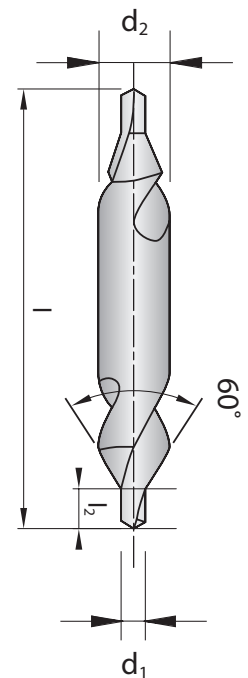
Vollhartmetall Zentrierer

Solid carbide centre drills



Zentrierbohrer DIN 333, Form A / Centre drills DIN 333, Form A

Bezeichnung Designation	D m7	d _A h6	l	l ₂
SPZ0100-0016 VHM/TIALN	1,00	3,15	31,5	1,6
SPZ0125-0019 VHM/TIALN	1,25	3,15	31,5	1,9
SPZ0160-0024 VHM/TIALN	1,60	4,00	35,5	2,4
SPZ0200-0029 VHM/TIALN	2,00	5,00	40,0	2,9
SPZ0250-0036 VHM/TIALN	2,50	6,30	45,0	3,6
SPZ0315-0044 VHM/TIALN	3,15	8,00	50,0	4,4
SPZ0400-0056 VHM/TIALN	4,00	10,00	56,0	5,6
SPZ0500-0069 VHM/TIALN	5,00	12,50	63,0	6,9
SPZ0630-0086 VHM/TIALN	6,30	16,00	71,0	8,6



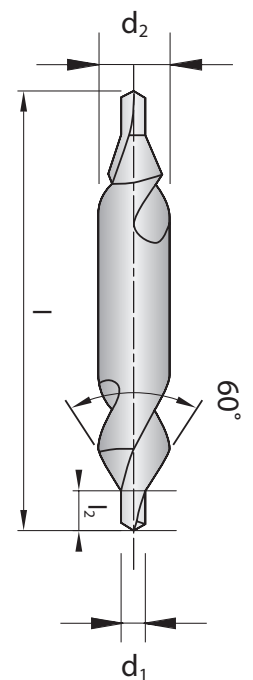
PM-HSS Zentrierer

Powder metal centre drills



Zentrierbohrer DIN 333, Form A / Centre drills DIN 333, Form A

Bezeichnung Designation	D m7	d _A h6	l	l ₂
SPZ0100-0016-PM TIALN	1,00	3,15	31,5	1,6
SPZ0125-0019-PM TIALN	1,25	3,15	31,5	1,9
SPZ0160-0024-PM TIALN	1,60	4,00	35,5	2,4
SPZ0200-0029-PM TIALN	2,00	5,00	40,0	2,9
SPZ0250-0036-PM TIALN	2,50	6,30	45,0	3,6
SPZ0315-0044-PM TIALN	3,15	8,00	50,0	4,4
SPZ0400-0056-PM TIALN	4,00	10,00	56,0	5,6
SPZ0500-0069-PM TIALN	5,00	12,50	63,0	6,9
SPZ0630-0086-PM TIALN	6,30	16,00	71,0	8,6



Vollhartmetall-Spiralbohrer

Empfohlene Schnittwerte

Solid carbide drills

Application reference



Vollhartmetall-Bohrer TiAlN-beschichtet (ohne Innenkühlung)

Solid carbide drills TiAlN coated (without internal coolant)

Werkstoff / Material	Zugfestigkeit Tensile strength [N/mm ²]	V _c [m/min] V _c [m/rev]	Durchmesser / Diameter [mm]							
			1 ~ 3 f [mm/U]	3 ~ 5 f [mm/U]	5 ~ 8 f [mm/U]	8 ~ 10 f [mm/U]	10 ~ 12 f [mm/U]	12 ~ 14 f [mm/U]	14 ~ 20 f [mm/U]	
Kupfer und Kupferlegierungen (Bronze / Messing) Copper and copper alloys (brass / bronze)	–	60–170	0,02–0,16	0,06–0,18	0,10–0,20	0,18–0,30	0,25–0,35	0,30–0,38	0,30–0,50	
Aluminium hoher Si-Gehalt Aluminium - high Si-content	–	60–179	0,05–0,10	0,10–0,20	0,15–0,30	0,20–0,30	0,25–0,35	0,25–0,35	0,30–0,50	
Aluminium niedriger Si-Gehalt Aluminium - low Si-content	–	70–260	0,05–0,10	0,10–0,20	0,15–0,30	0,20–0,30	0,25–0,35	0,25–0,35	0,30–0,50	
Titanlegierungen Titanium alloys	–	13–32	0,01–0,04	0,03–0,07	0,06–0,12	0,06–0,12	0,08–0,15	0,08–0,15	0,10–0,16	
Hochtemperaturlegierungen High Temperature alloys	> 1000	13–27	0,02–0,06	0,03–0,07	0,04–0,08	0,06–0,10	0,08–0,14	0,08–0,14	0,08–0,16	
Nickellegierungen Nickel alloys	> 1000	13–27	–	–	–	–	–	–	–	
„Superlegierungen“ z.B. Inconel Hasteloy Nimonic Super Alloys e.g. Inconel, Hasteloy, Nimonic	> 1000	13–27	–	–	–	–	–	–	–	
Unlegierter Stahl und Stahlguss Unalloyed steel and cast steel	bis / up to 600	80–102	0,05–0,10	0,10–0,18	0,15–0,25	0,20–0,30	0,20–0,30	0,20–0,35	0,25–0,40	
Unlegierter Stahl und Stahlguss Unalloyed steel and cast steel	600–900	68–85	0,01–0,10	0,08–0,18	0,15–0,25	0,20–0,30	0,20–0,30	0,20–0,35	0,25–0,40	
	450–900	55–77	0,05–0,15	0,10–0,20	0,15–0,25	0,18–0,35	0,18–0,35	0,20–0,35	0,25–0,42	
Nieder- und hochlegierte Stähle und Stahlguss Low and high alloyed steels and cast steel	900–1000	43–60	0,06–0,12	0,08–0,15	0,10–0,18	0,15–0,25	0,15–0,25	0,16–0,30	0,20–0,32	
	über / over 1000	37–50	0,06–0,12	0,08–0,15	0,10–0,18	0,15–0,25	0,15–0,25	0,16–0,30	0,20–0,32	
Rostfreie Stähle Stainless steels	500–700	38–50	0,02–0,08	0,04–0,10	0,06–0,12	0,10–0,20	0,10–0,20	0,10–0,20	0,12–0,25	
Rostfreie Stähle Stainless steels	700–1000	30–43	0,02–0,08	0,04–0,10	0,06–0,12	0,10–0,20	0,10–0,20	0,10–0,20	0,12–0,25	
	bis / up to 700	77–110	0,10–0,15	0,12–0,16	0,15–0,33	0,25–0,45	0,25–0,45	0,30–0,50	0,35–0,55	
Gusseisen, Temperguss Cast iron, malleable cast iron	850–1000	60–72	0,08–0,15	0,10–0,16	0,12–0,30	0,20–0,40	0,20–0,40	0,25–0,40	0,30–0,45	
Hartguss Hard cast iron	1170 – 1500	35–55	0,06–0,10	0,08–0,12	0,08–0,12	0,10–0,14	0,10–0,14	0,12–0,16	0,14–0,18	

Achtung:

Bei unbeschichteten Spiralbohrern die Schnittgeschwindigkeiten um ca. 30% reduzieren.

Attention:

Reduce the cutting speed by approximately 30% when using the uncoated drills.

Achtung:

Die obigen Empfehlungen gelten für Bohrer bis Bohrtiefe 3 x D. Bitte reduzieren Sie den Vorschub bei 5 x D um den Faktor 0,85.

Attention:

Cutting Data refer to solid carbide drills 3 x D. For using 5 x D please reduce the feed rate by factor 0,85.

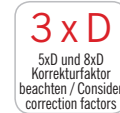
Alle Angaben in mm / Dimensions in mm

Vollhartmetall-Spiralbohrer

Empfohlene Schnittwerte

Solid carbide drills

Application reference



Vollhartmetall-Bohrer mit Kühlkanal DIN6537, TiAlN-beschichtet

Solid carbide drills with coolant DIN6537, TiAlN coated

Werkstoff / Material	Zugfestigkeit Tensile strength [N/mm ²]	V _c [m/min] V _c [m/rev]	Durchmesser / Diameter [mm]						
			1 ~ 3 f [mm/U]	3 ~ 5 f [mm/U]	5 ~ 8 f [mm/U]	8 ~ 10 f [mm/U]	10 ~ 12 f [mm/U]	12 ~ 14 f [mm/U]	14 ~ 20 f [mm/U]
Kupfer und Kupferlegierungen (Bronze / Messing) Copper and copper alloys (brass / bronze)	-	70-200	0,02-0,16	0,06-0,18	0,10-0,20	0,18-0,30	0,25-0,35	0,30-0,38	0,30-0,50
Aluminium hoher Si-Gehalt Aluminium - high Si-content	-	70-210	0,05-0,10	0,10-0,20	0,15-0,30	0,20-0,30	0,20-0,35	0,25-0,35	0,30-0,50
Aluminium niedriger Si-Gehalt Aluminium - low Si-content	-	80-305	0,05-0,10	0,10-0,20	0,15-0,30	0,20-0,30	0,20-0,35	0,25-0,35	0,30-0,50
Titanlegierungen Titanium alloys	-	15-38	0,01-0,04	0,03-0,07	0,06-0,12	0,06-0,12	0,08-0,15	0,08-0,15	0,10-0,16
Hochtemperaturlegierungen High Temperature alloys	> 1000	15-32	0,02-0,06	0,03-0,07	0,04-0,08	0,06-0,10	0,08-0,12	0,08-0,14	0,08-0,16
Nickellegierungen Nickel alloys	> 1000	15-32	-	-	-	-	-	-	-
„Superlegierungen“ z.B. Inconel Hasteloy Nimonic Super Alloys e.g. Inconel, Hasteloy, Nimonic	> 1000	15-32	-	-	-	-	-	-	-
Unlegierter Stahl und Stahlguss Unalloyed steel and cast steel	bis / up to 600	100-120	0,05-0,10	0,10-0,18	0,15-0,25	0,18-0,28	0,20-0,30	0,20-0,35	0,25-0,40
Unlegierter Stahl und Stahlguss Unalloyed steel and cast steel	600-900	80-100	0,05-0,10	0,08-0,18	0,15-0,25	0,18-0,28	0,20-0,30	0,20-0,35	0,25-0,40
	450-900	65-90	0,05-0,15	0,10-0,20	0,15-0,25	0,18-0,30	0,18-0,35	0,20-0,35	0,25-0,42
Nieder- und hochlegierte Stähle und Stahlguss Low and high alloyed steels and cast steel	900-1000	50-70	0,06-0,12	0,08-0,15	0,10-0,18	0,12-0,20	0,15-0,25	0,16-0,30	0,20-0,32
	über / over 1000	43-60	0,06-0,12	0,08-0,15	0,10-0,18	0,12-0,20	0,15-0,25	0,16-0,30	0,20-0,32
Rostfreie Stähle Stainless steels	500-700	45-60	0,02-0,08	0,04-0,10	0,06-0,12	0,10-0,18	0,10-0,20	0,10-0,20	0,12-0,25
Rostfreie Stähle Stainless steels	700-1000	35-50	0,02-0,08	0,04-0,10	0,06-0,12	0,10-0,18	0,10-0,20	0,10-0,20	0,12-0,25
Gusseisen, Temperguss Cast iron, malleable cast iron	bis / up to 700	90-130	0,08-0,10	0,12-0,16	0,15-0,33	0,20-0,40	0,25-0,45	0,30-0,50	0,35-0,55
	850-1000	70-85	0,08-0,10	0,10-0,16	0,12-0,30	0,20-0,35	0,20-0,40	0,25-0,40	0,30-0,45
Hartguss Hard cast iron	1170 - 1500	40-65	0,04-0,08	0,06-0,10	0,08-0,12	0,10-0,14	0,10-0,14	0,12-0,16	0,14-0,18

Achtung:

Die obigen Empfehlungen gelten für Bohrer bis Bohrtiefe 3 x D.
Bitte reduzieren Sie den Vorschub bei 5 x D oder 8 x D um den Faktor: 5 x D: 0,85 und 8 x D: 0,70

Attention:

Cutting Data refer to solid carbide drills 3 x D.
For using 5 x D or 8 x D please reduce the feed rate by following factor: 5 x D: 0,85 and 8 x D: 0,70.

PM-HSS-Spiralbohrer

Empfohlene Schnittwerte

Powder metal drills drills

Application reference



PM-HSS Spiralbohrer (ohne Innenkühlung) Powder metal drills (without internal coolant)

Werkstoff / Material	Vc [m/min] Vc [m/rev]	Durchmesser / Diameter [mm]									
		1 f [mm/U]	2 f [mm/U]	3 f [mm/U]	4 f [mm/U]	5 f [mm/U]	6 f [mm/U]	8 f [mm/U]	10 f [mm/U]	12 f [mm/U]	
Baustahl, Kohlenstoffstahl, Automatenstahl Structural steels, Carbon steels, Free machining steels	30-50	0,02	0,06	0,12	0,15	0,16	0,20	0,24	0,27	0,29	
Legierter Stahl, Naturharter Stahl Alloy steels, pre-hardened steels	25-32	0,02	0,05	0,09	0,13	0,16	0,18	0,20	0,24	0,26	
Werkzeugstahl, Rostfreier Stahl, gehärteter Stahl 30-45 HRC Tool steels, Stainless steel, Hardened steels HRC 30-45	10-16	0,02	0,05	0,09	0,10	0,11	0,14	0,17	0,21	0,23	
Gusseisen Cast iron	35-55	0,03	0,08	0,14	0,18	0,21	0,25	0,29	0,32	0,36	
Aluminiumlegierungen, Nichteisenlegierungen Aluminum alloys, non-ferrous alloys	50-70	0,04	0,09	0,15	0,18	0,22	0,25	0,30	0,33	0,35	
Hochtemperaturlegierungen, Superlegierungen (Nimonic, Hasteloy, Inconell ...) High temperature alloys, superalloys (Nimonic, Hasteloy, Inconell ...)	3-8	0,01	0,02	0,03	0,04	0,05	0,06	0,08	0,10	0,12	
Titan, Titanlegierungen Titanium, titanium alloys	3-8	0,01	0,02	0,03	0,04	0,05	0,06	0,08	0,10	0,12	
Hardox (Hardox 400/500) Hardox (Hardox 400/500)	4-6	-	-	-	-	-	0,06	0,07	0,08	0,10	

Empfohlenes Kühlmittel Recommended coolant

Werkstoff / Material	Empfohlenes Kühlmittel / Recommended coolant
Baustahl, Kohlenstoffstahl / Structural steel, Carbon steel	Emulsion (ca. 7 - 8%) / Emulsion (approx. 7 - 8%)
Legierter Stahl, Stahlguss / Alloy steel, Cast steel	Emulsion (ca. 7 - 8%) oder [Öl] / Emulsion (approx. 7 - 8%) or [oil]
Rostfreier Stahl, Federstahl / Stainless steel, Spring steel	Öl oder (Emulsion ca. 10 - 12%) / Oil or (Emulsion approx. 10 - 12%)

Vollhartmetall-Spiralbohrer

Solid carbide drills

Empfohlene Schnittwerte 10xD / 15xD / 20xD / 25xD / 30xD

Application reference 10xD / 15xD / 20xD / 25xD / 30xD

Vollhartmetall-Bohrer mit Kühlkanal DIN6537, TiAlN-beschichtet

Solid carbide drills with coolant DIN6537, TiAlN coated



Material		Durchmesser / Diameter [mm]				
		3 ~ 5	5 ~ 8	8 ~ 12	12 ~ 16	
		Vc [m/min]	f [mm/U]	f [mm/U]	f [mm/U]	f [mm/U]
Automatenstahl Free cutting steel	bis / up to 500 N/mm ²	90-110	0,14	0,20	0,275	0,35
	über / above 500 N/mm ²	75-100	0,10	0,15	0,200	0,26
Baustahl Construction steel	unlegiert bis / unalloyed up to 500 N/mm ²	90-110	0,14	0,20	0,275	0,35
	unlegiert über / unalloyed above 500 N/mm ²	75-100	0,10	0,15	0,200	0,26
	legiert / alloyed	70-95	0,10	0,15	0,200	0,26
Federstahl Spring steel	geglüht / annealed (up to 250 HB)	–	–	–	–	–
	naturhart / nature hard (250 - 350 HB)	–	–	–	–	–
	federhart / cold-hammered (1200 - 1600 N/mm ²)	–	–	–	–	–
Einsatzstahl Hardened steel	bis / up to 150 HB	80-105	0,14	0,20	0,275	0,35
	150-200 HB	75-100	0,14	0,15	0,275	0,35
	über / above 200 HB	70-95	0,10	0,15	0,200	0,26
Nitrierstahl Nitriding steel	bis / up to 1000 N/mm ²	70-95	0,1	0,15	0,2	0,26
	über / above 1000 N/mm ²	70-95	0,1	0,15	0,2	0,26
Vergütungsstahl Tempering steel	unlegiert bis / unalloyed up to 800 N/mm ²	75-95	0,14	0,20	0,275	0,35
	unlegiert / unalloyed – 800-1000 N/mm ²	70-95	0,10	0,15	0,200	0,26
	legiert bis / alloyed up to 800 N/mm ²	70-95	0,14	0,20	0,275	0,35
	legiert / alloyed 800-1000 N/mm ²	70-95	0,10	0,15	0,200	0,26
	legiert / alloyed 1000-1300 N/mm ²	55-75	0,10	0,15	0,200	0,26
	legiert / alloyed 1300-1600 N/mm ²	–	–	–	–	–
Werkzeugstahl unlegiert Unalloyed tool steel	allgemein / general	55-75	0,1	0,15	0,2	0,26
Werkzeugstahl für Kaltarbeit Tool steel for cold application	niedrig legiert bis / low alloy up to 1000 N/mm ²	70-95	0,1	0,15	0,2	0,26
	niedrig legiert bis / low alloy up to 1200 N/mm ²	55-75	0,1	0,15	0,2	0,26
	niedrig legiert bis / low alloy up to 1500 N/mm ²	–	–	–	–	–
	hoch legiert-geglüht bis / high alloy-annealed up to 1000 N/mm ²	–	–	–	–	–
	hoch legiert-vergütet bis / high alloy-tempered up to 1300 N/mm ²	–	–	–	–	–
Werkzeugstahl für Warmarbeit Tool steel for warm application	niedrig legiert bis / low alloy up to 1200 N/mm ²	–	–	–	–	–
	niedrig legiert bis / low alloy up to 1500 N/mm ²	–	–	–	–	–
	hoch legiert-geglüht bis / high alloy-annealed up to 1000 N/mm ²	55-75	0,1	0,15	0,2	0,26
	hoch legiert-vergütet bis / high alloy-tempered up to 1300 N/mm ²	–	–	–	–	–
	hoch legiert-vergütet bis / high alloy-tempered up to 1600 N/mm ²	–	–	–	–	–
Gehärteter Werkzeugstahl Hardened tool steel	55-70 HRC	–	–	–	–	–
Rostfreier Stahl Stainless steel	ferritisch / ferritic	70-75	0,08	0,12	0,15	0,2
	martensitisch / martensitic	45-60	0,08	0,12	0,15	0,2
	austenitisch / austenitic < 40%	50-65	0,08	0,12	0,15	0,2
	austenitisch / austenitic > 40%	50-65	0,08	0,12	0,15	0,2
	geschwefelt / sulfated	70-75	0,08	0,12	0,15	0,2
Hochwarmfeste Legierungen High-temperature alloy	Fe / Ni / Co-Legierungen / alloys	–	–	–	–	–
Konventioneller Stahlguss Conventional steel casting	unlegiert / unalloyed	75-100	0,14	0,20	0,275	0,35
	niedrig legiert / low alloy	70-95	0,10	0,15	0,200	0,26
	hoch legiert / high alloy	55-75	0,10	0,15	0,200	0,26
Rostfreier Stahlguss Stainless steel casting	ferritisch/martensitisch / ferritic/martensitic	45-65	0,08	0,12	0,15	0,2
	austenitisch / austenitic	50-60	0,08	0,12	0,15	0,2
Grauguss (mit Lamellen-Graphit) Cast iron (with lamella graphite)	unlegiert bis / unalloyed up to 180 HB	85-105	0,23	0,335	0,425	0,52
	unlegiert über / unalloyed above 180 HB	75-100	0,23	0,335	0,425	0,52
	unlegiert / unalloyed	70-95	0,23	0,335	0,425	0,52
	hoch legiert / high alloy	65-75	0,08	0,120	0,150	0,20
Grauguss (mit Kugelgraphit) Cast iron (with spheroidale graphite)	unlegiert bis / unalloyed up to 180 HB	80-105	0,20	0,250	0,35	0,400
	unlegiert über / unalloyed above 180 HB	75-100	0,20	0,250	0,35	0,400
	legiert / alloyed	55-75	0,11	0,125	0,15	0,175
GTW (weißer Temperguss) GTW (white malleable cast iron)	bis / up to 180 HB	80-105	0,2	0,25	0,35	0,4
	über / above 180 HB	75-100	0,2	0,25	0,35	0,4
GTS (schwarzer Temperguss) GTS (black malleable cast iron)	bis / up to 180 HB	80-105	0,2	0,25	0,35	0,4
	über / above 180 HB	75-100	0,2	0,25	0,35	0,4
NE-Metalle Non-ferrous metal	Aluminium	–	–	–	–	–
	Magnesium	–	–	–	–	–
	Kupfer / Copper	–	–	–	–	–
	Messing / Brass (CuZn)	–	–	–	–	–
	Bronze (CuSn)	–	–	–	–	–
Thermoplast / Duroplast		–	–	–	–	–
Faserverstärkter Kunststoff Fibre-reinforced plastic		–	–	–	–	–
Graphit / Graphite		–	–	–	–	–

Vollhartmetall-Spiralbohrer

Empfohlene Schnittwerte für Aluminium

Solid carbide drills

Recommended cutting data for aluminium



3 x D und 5 x D – VHM-Spiralbohrer – Diamant beschichtet (mit Innenkühlung)

3 x D und 5 x D – Solid carbide drills – diamond coated (with internal coolant)

Werkstoff / Material	Härte / Hardness		V _c [m/min] V _c [m/rev]	Durchmesser / Diameter [mm]								
				3 f [mm/U]	4 f [mm/U]	5 f [mm/U]	6 f [mm/U]	8 f [mm/U]	10 f [mm/U]	12 f [mm/U]	16 f [mm/U]	20 f [mm/U]
Aluminium und Al-Legierungen Aluminium and AL alloys	< 400 N/mm ²	Öl/Emulsion	260	0,160	0,200	0,250	0,315	0,315	0,400	0,500	0,630	0,630
Aluminium-Knetlegierungen Aluminium alloys – long chipping	< 450 N/mm ²	Öl/Emulsion	260	0,160	0,200	0,250	0,315	0,315	0,400	0,500	0,630	0,630
Aluminium-Gusslegierungen < 10% Si Cast aluminium alloys < 10% Si	< 600 N/mm ²	Öl/Emulsion	220	0,160	0,200	0,250	0,315	0,315	0,400	0,500	0,630	0,630
Aluminium-Gusslegierungen > 10% Si Cast aluminium alloys > 10% Si	< 600 N/mm ²	Öl/Emulsion	180	0,160	0,200	0,250	0,315	0,315	0,400	0,500	0,630	0,630
Magnesium-Legierungen Magnesium alloys	< 450 N/mm ²	Luft / Air	260	0,160	0,200	0,200	0,250	0,315	0,400	0,400	0,500	0,630
Messing – kurzspanend Brass – short chipping	< 600 N/mm ²	Öl/Emulsion	270	0,160	0,200	0,200	0,250	0,315	0,400	0,400	0,500	0,630
Messing – langspanend Brass – long chipping	< 600 N/mm ²	Öl/Emulsion	180	0,125	0,160	0,160	0,200	0,250	0,315	0,315	0,400	0,500

8 x D – VHM-Spiralbohrer – Diamant beschichtet (mit Innenkühlung)

8 x D – Solid carbide drills – diamond coated (with internal coolant)

Werkstoff / Material	Härte / Hardness	Härte / Hardness	V _c [m/min] V _c [m/rev]	Durchmesser / Diameter [mm]						
				3 f [mm/U]	4 f [mm/U]	5 f [mm/U]	6 f [mm/U]	8 f [mm/U]	10 f [mm/U]	12 f [mm/U]
Aluminium und Al-Legierungen Aluminium and AL alloys	< 400 N/mm ²	Öl/Emulsion	260	0,160	0,200	0,200	0,250	0,315	0,400	0,400
Aluminium-Knetlegierungen Aluminium alloys – long chipping	< 450 N/mm ²	Öl/Emulsion	260	0,160	0,200	0,200	0,250	0,315	0,400	0,400
Aluminium-Gusslegierungen < 10% Si Cast aluminium alloys < 10% Si	< 600 N/mm ²	Öl/Emulsion	220	0,160	0,200	0,200	0,250	0,315	0,400	0,400
Aluminium-Gusslegierungen > 10% Si Cast aluminium alloys > 10% Si	< 600 N/mm ²	Öl/Emulsion	180	0,160	0,200	0,200	0,250	0,315	0,400	0,400
Magnesium-Legierungen Magnesium alloys	< 450 N/mm ²	Luft / Air	260	0,125	0,160	0,160	0,200	0,250	0,315	0,315
Messing – kurzspanend Brass – short chipping	< 600 N/mm ²	Öl/Emulsion	270	0,125	0,160	0,160	0,200	0,250	0,315	0,315
Messing – langspanend Brass – long chipping	< 600 N/mm ²	Öl/Emulsion	180	0,100	0,125	0,125	0,160	0,200	0,250	0,250

Vollhartmetall-Spiralbohrer

Empfohlener Kühlmitteldruck und Volumen

Solid carbide drills

Recommended coolant pressure and volume

Mindestdruck [bar]

Min. coolant pressure

Werkstoff / Material	Durchmesser / Diameter [mm]			
	5 [bar]	10 [bar]	15 [bar]	20 [bar]
Stahlbearbeitung Steel drilling	22	15	9	5
Aluminiumbearbeitung Aluminium drilling	25	20	15	10
Gussbearbeitung Cast drilling	38	30	20	18

Mindestvolumen [L/min]

Min. coolant volume

Werkstoff / Material	Durchmesser / Diameter [mm]			
	5 [L/min]	10 [L/min]	15 [L/min]	20 [L/min]
Stahlbearbeitung Steel drilling	3	6	7	9
Aluminiumbearbeitung Aluminium drilling	4	6	9	10
Gussbearbeitung Cast drilling	5	9	14	16



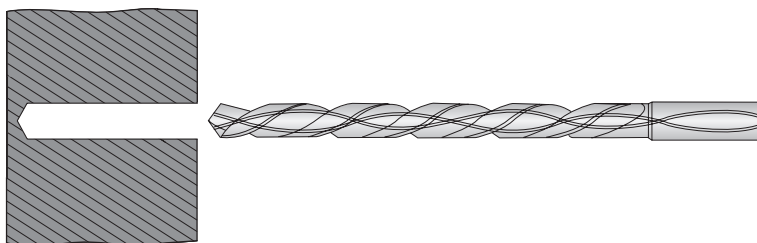
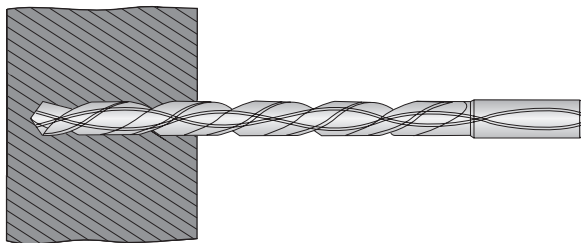
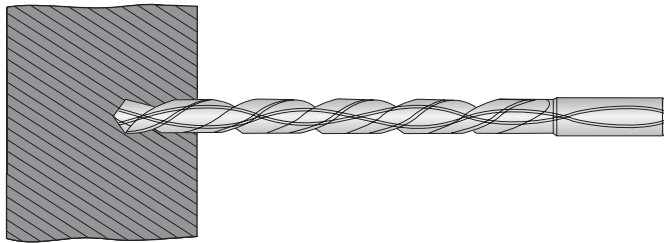
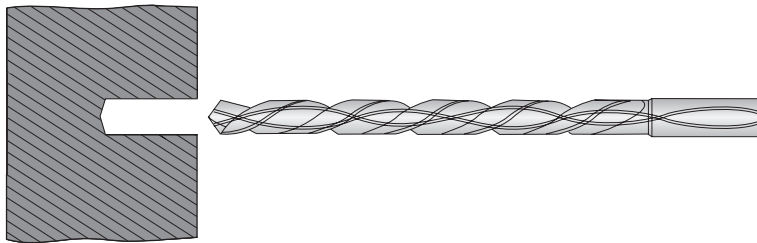
VHM-Spiralbohrer für gehärtete Stähle (ohne Innenkühlung)

Solid carbide drills for hardened steels (without internal coolant)

Material Härte / Material hardness		Durchmesser / Diameter [mm]								
		3	4	5	6	8	10	12	14	
V_c [m/min]		f [mm/U]	f [mm/U]	f [mm/U]	f [mm/U]	f [mm/U]	f [mm/U]	f [mm/U]	f [mm/U]	
50 ~ 55 HRC	14 - 22	[U/min]	1900	1430	1150	960	720	570	480	430
		[mm/U]	0,04 ~ 0,06	0,04 ~ 0,07	0,04 ~ 0,08	0,04 ~ 0,09	0,04 ~ 0,09	0,04 ~ 0,10	0,04 ~ 0,11	0,04 ~ 0,11
55 ~ 60 HRC	10 - 16	[U/min]	1330	1000	800	670	500	400	330	280
		[mm/U]	0,04 ~ 0,06	0,04 ~ 0,07	0,04 ~ 0,08	0,04 ~ 0,09	0,04 ~ 0,09	0,04 ~ 0,10	0,04 ~ 0,11	0,04 ~ 0,11
60 ~ 70 HRC	8 - 13	[U/min]	1250	850	750	630	480	380	320	270
		[mm/U]	0,04 ~ 0,06	0,04 ~ 0,07	0,04 ~ 0,08	0,04 ~ 0,09	0,04 ~ 0,09	0,04 ~ 0,10	0,04 ~ 0,11	0,04 ~ 0,11

Anwendungshinweise

Application notes 10xD / 15xD / 20xD / 25xD / 30xD



- Pilotbohrung setzen zwischen 3 und 5xD tief im Nenndurchmesser (Tol. +0,1 mm). Verwenden Sie hierzu z. B. unsere VHM Bohrer in 3 oder 5xD (Toleranzklasse m7) welche sich hierfür hervorragend eignen.**
Pre-Drilling should be done at the diameter +0.1 mm using 3 x D or 5 x D.
- Zur eigentlichen Bohrbearbeitung mit geringer Drehzahl in die Pilotbohrung einfahren (n = 300 U/min, Vf = 400 mm/min).**
For main drilling, proceed with low RPM for pre-drilled length. (RPM 300 U/min, Feed 400mm/min).
- Kurz vor dem Grund der Pilotbohrung (ca. 0,5 bis 1 mm), den Vorschub auf null reduzieren und die Drehzahl auf empfohlene Werte erhöhen (siehe Schnittwerttabelle). Ebenso sollte nun die Kühlung aktiviert werden.**
Just before the end of the pre-drilled hole, reduce feed to zero and increase the RPM according to the recommended cutting condition chart (see below).
- Nun mit der Bohrbearbeitung fortfahren, indem der Vorschub auf die empfohlenen Werte erhöht wird. Bohren möglichst in einem Zug ohne Spanbruchzyklus.**
Then continue to drill the hole by increasing the feed without step drilling.
- Nach Erreichen der Endbohrtiefe mit Drehzahl 300 U/min und Vorschubgeschwindigkeit 1000 mm/min aus der Bohrung herausfahren.**
When retracting drill from pre-drilled hole after drilling, RPM should be reduced to 300 U/Min and feed should be 1000 mm/min.
- Bei Durchgangsbohrungen, während des Austrittes den Arbeitsvorschub um ca. 50% reduzieren (f ca. 0,05 - 0,1 mm/U).**
When retracting the drill from the pre-drilled hole, when clear the feed can then be reduced by 50%. (f = ca. 0.05 - 0.1 mm/U).

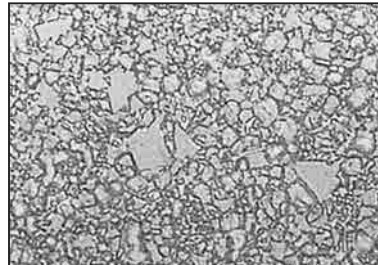
ARNO®-Vollhartmetallfräser sind aus Feinstkorn-Hartmetall (Ultra-Micro-Grain) gefertigt. Die Korngrößen betragen 0–0,5 µm und je nach Ausführung sind sie mit verschiedenen Beschichtungen versehen (TiAlN, TiCN bzw. Diamant).

The ARNO® Solid carbide milling range is made of ultra micrograin carbide. The grain size is between 0–0.5 micron and coated depending on application with various coatings (TiAlN, TiCN or TIA70).



Feinstkorn-Hartmetall-Kornstruktur
Ultra-Micro-Grain, Korngrößen 0–0,5 µm

Finegrain-hardmetal structure
Ultra-micro-grain, grain size 0–0.5 micron



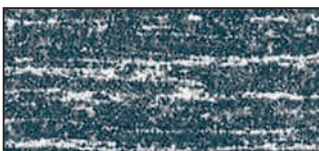
Allgemeine Hartmetall-Kornstruktur

General carbide structure

Pulvermetallurgische HSS-Fräser... die neue Pulverstahl-Generation! Extrem zäh und verschleißfest.
Powder metal HSS milling... the new powder steel generation! Very tough and wear resistant.

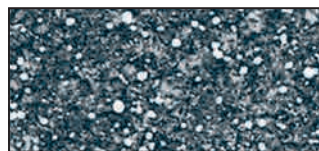
Ein Premium-HSS-Stahl der alle bisherigen Leistungsmerkmale in den Schatten stellt. Es ist gelungen, den Anteil eingeschlossener oxydischer Gaskomponenten und Schlackepartikel im Stahl auf ein Minimum zu reduzieren. Dieser besonders homogene Pulverstahl garantiert beste Zerspanungsergebnisse.

This PM-HSS-steel overshadows the performance of all previous results. We have succeeded to reduce the oxide components and particles in the steel to an absolute minimum. This especially pure powdersteel guarantees the best cutting performance.



Herkömmlicher HSS-Fräser
• spröde Kornstruktur
• begrenzte Festigkeit

Original HSS-milling cutter
• brittle construction
• limited strength



Pulvermetallurgischer HSS-Fräser
• feine Mikro-Kornstruktur
• gleichmäßige Kornverteilung
• höchste Festigkeit

Powder metallurgy HSS-milling cutter
• fine micro grain structure
• even grain formation
• highest strength

Im herkömmlich gegossenen Schnellarbeitsstahl sind die Karbidzeilen häufig so groß, dass es auf die Menge eingeschlossener ca. 10 bis 20 µm großer Schlackenpartikel meist nicht ankommt. Die oben abgebildete Darstellungen zeigen deutlich, dass im pulvermetallurgischen Stahl die Karbide wesentlich kleiner (ca. 1 bis 3 µm) sind. Dadurch wird der Einschluss von Schlackepartikeln nur in ganz geringem Maße ermöglicht.

Das Resultat: Ein sehr reiner Stahl, der das Risiko des Werkzeugversagens aufgrund metallischer Einschlüsse stark reduziert.

In traditional high speed steel the grain size is often so big, that the amount of 10–20 µm larger particles makes no difference. The above pictures shows clearly that in powder steel the grain size is much smaller (approx 1–3 µm). Therefore the contamination by particles is much reduced.

The Result: A very clean steel, which strongly reduces the risk of tool breakage due to contamination.